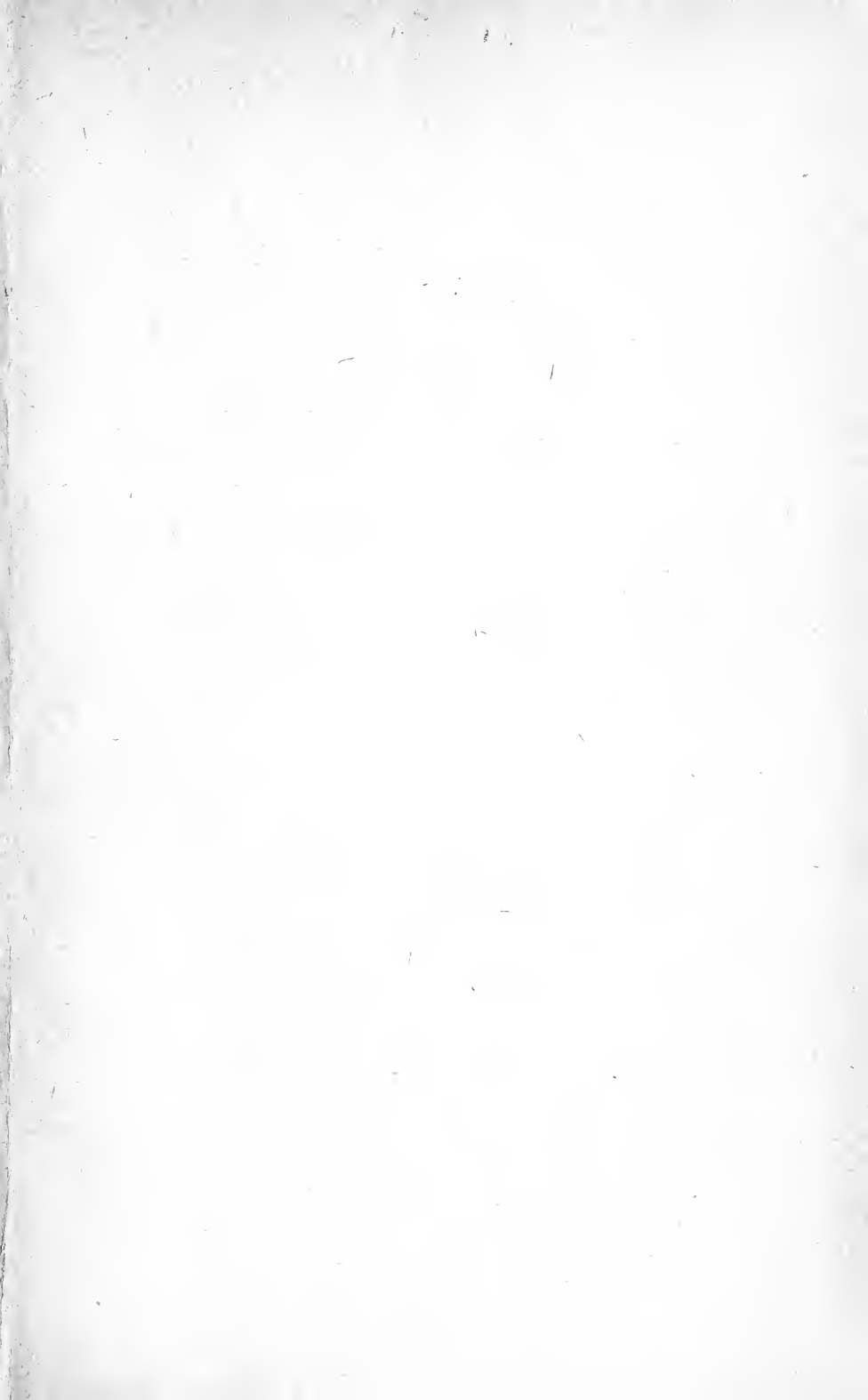


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Northeastern College

SCHOOL OF LAW

TWENTY-SECOND YEAR

1919-1920



BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
BOSTON, MASSACHUSETTS

NORTHEASTERN COLLEGE

of the

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

School of Law

Established in 1898; incorporated in 1904. Provides a four-year course in preparation for the bar and grants the degree of Bachelor of Laws.

School of Commerce and Finance

Established in 1907; incorporated in 1911. Offers the following three- and four-year courses leading to the degree of B.C.S. (Bachelor of Commercial Science): Business Administration, and Professional Accountancy. Any one passing the examination for advanced standing is enabled to complete either of the regular courses and secure the degree in three years. Special courses in addition to regular courses.

Co-operative School of Engineering

Four-year courses in Chemical, Mechanical, Electrical and Civil Engineering, in coöperation with business firms. Students earn while learning. Open to high-school graduates.

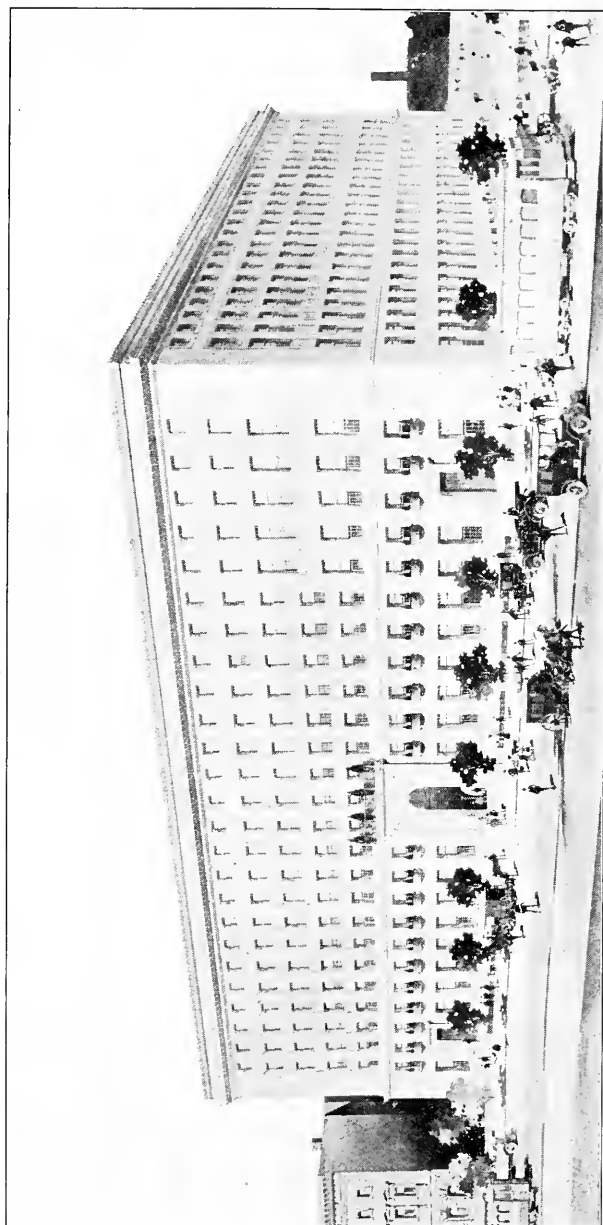
Evening School of Engineering

A school offering four-year courses in Civil, Chemical, Electrical, Structural and Mechanical Engineering.

School of Liberal Arts

A school offering courses of college grade in English, Ancient and Modern Languages, Mathematics, Science, History, Economics, Government, Logic, Psychology, Education, Philosophy and Journalism. Professors and instructors of New England colleges are engaged. These courses will be open to graduates of high schools and to others who can meet the entrance requirements.

For further information concerning any of the above schools, address Northeastern College of the Boston Y.M.C.A., 316 Huntington Avenue, Boston, Mass. Tel.: Back Bay 4400.



ASSOCIATION BUILDING

Northeastern College

SCHOOL OF LAW

*An Evening Law School
with Day School Standards*

*Case Method of Instruction
Competent Instructors
Compulsory Attendance
Rigorous Examinations*

Published by
NORTHEASTERN COLLEGE
of the
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
316 Huntington Avenue, Boston, Mass.

Calendar

1919	September 2-6	Condition Examinations
	September 2-13	Registration
	September 8	Senior Class Lectures begin
	September 15	Other Class Lectures begin
	October 12	Columbus Day
	November 27	Thanksgiving Day
	December 24	
	January 3 inclusive	Christmas Recess
1920	February 22	Washington's Birthday
	April 19	Patriots' Day
	May 30	Memorial Day
	June 13	Baccalaureate Address
	June 16	Commencement

The social features will be announced from time to time.

Condition Examinations, 1919

Tuesday, Sept. 2	Criminal Law, Property I, Corporations
Wednesday, Sept. 3	Torts, Equity I, Property II (Deeds)
Thursday, Sept. 4	Agency, Civil Procedure at Common Law, Partnership
Friday, Sept. 5	Contracts, Bills and Notes, Equity II
Saturday, Sept. 6	Sales, Wills

Examinations must be taken at the time scheduled, as no special examinations will be given.

Northeastern College

of the

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

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HOWARD HENRY CHARLES BINGHAM, A.B., *Executive Secretary*

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Massachusetts Practice and Bankruptcy

W. LLOYD ALLEN, A.B., LL.B.,
Agency

HERBERT LUTHER BARRETT, A.B., LL.B.,
Criminal Law

ARTHUR WILLIS BLACKMAN, A.B., LL.B.,
Equity I

WILLIAM EDWIN DORMAN, A.B., LL.B.,
Constitutional Law

WILFORD DRURY GRAY, A.B., J.B.,
Partnership

WILLIAM HAROLD HITCHCOCK, A.B., LL.B.,
Equity II

GUY HAROLD HOLLIDAY, A.B., LL.B.,
Civil Procedure at Common Law

HAROLD PENDENTER JOHNSON, A.B., LL.B.,
Property II

WILLIAM AIKEN KNEELAND, A.B., J.B.,
Property I

HUGH DEAN McLELLAN, A.B., LL.B.,
Contracts

GUY NEWHALL, A.B., LL.B.,
Property III

CLARENCE LUCIAN NEWTON, PH.D., J.M.,
Corporations and Wills

RAYMOND TASKER PARKE, A.M., LL.B.
Bills and Notes, and Sales

OSCAR STORER, A.B., LL.B.
Torts and Evidence

NATHAN BEACH BIDWELL, *Counselor*

Special Lecturers

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Of Goodwin, Procter & Ballantine

HOWARD W. BROWN, LL.B.
Of Davis, Peabody & Brown

ALBERT P. CARTER, A.B., LL.B.
Attorney at Law

ROBERT CUSHMAN, A.B., LL.B.
Of Roberts, Roberts & Cushman

FAY B. KENDALL, LL.B.
Of Sprout & Kendall

EDWARD F. McCLENNEN, LL.B.
Of Dunbar, Nutter & McCleennen

HUGH W. OGDEN, A.M., LL.B.
Of Whipple, Sears & Ogden

CHANDLER M. WOOD, A.M., J.M.
Attorney at Law

Committee on Admission

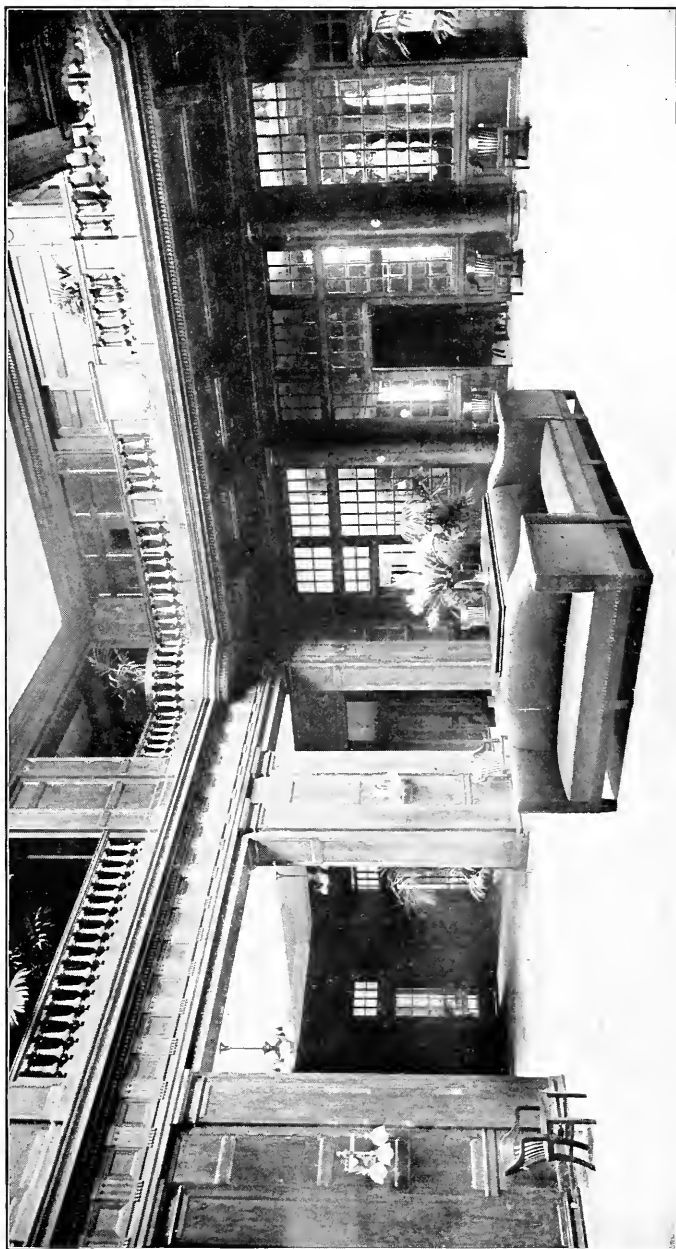
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LOBBY

The Study of Law

The part played by law schools in American educational development has been most remarkable in the past, but the part they are to play in the future is bound to be of even greater interest and value. Each year carries the enrollment figures far above those of the previous year and indicates more and more clearly that ambitious young men in ever increasing numbers choose law schools as furnishing the training best calculated to fit them for their life work.

This class of unusually intelligent men would not decide upon the law unless there were excellent reasons. These are plain, however, to one in touch with industrial, commercial, and political life, and may be summed up as follows: The law, treating of every phase of human relationship, fits the student in a most unusual manner to deal with men and affairs, trains him to think, to think straight, to think a proposition clear through to the end, and then to act in accordance with judgment based on a clean-cut analysis of the facts, *pro* and *con*. This habit of analytical thinking and judicial action is indispensable to the practitioner of law, and of equal importance to the business man and those in political life; and it accounts in great measure for the marked success attending legally trained men in these lines of activity, and the large number constantly going from the law schools into diversified occupations.

Another valuable feature of the study of law, and one not found in the study of most subjects, is the fact that one begins to grow mentally as soon as he begins to study. The student's progress may be noted from the outset, the frequent application of the things learned being most strikingly evident to the business man. A law course, therefore, like money on interest, yields a return from the beginning, and this return rolls up month by month. If obliged to withdraw after a limited period, the student of law finds himself stronger and broader, and more intelligent and logical in his reasoning and acts. These facts

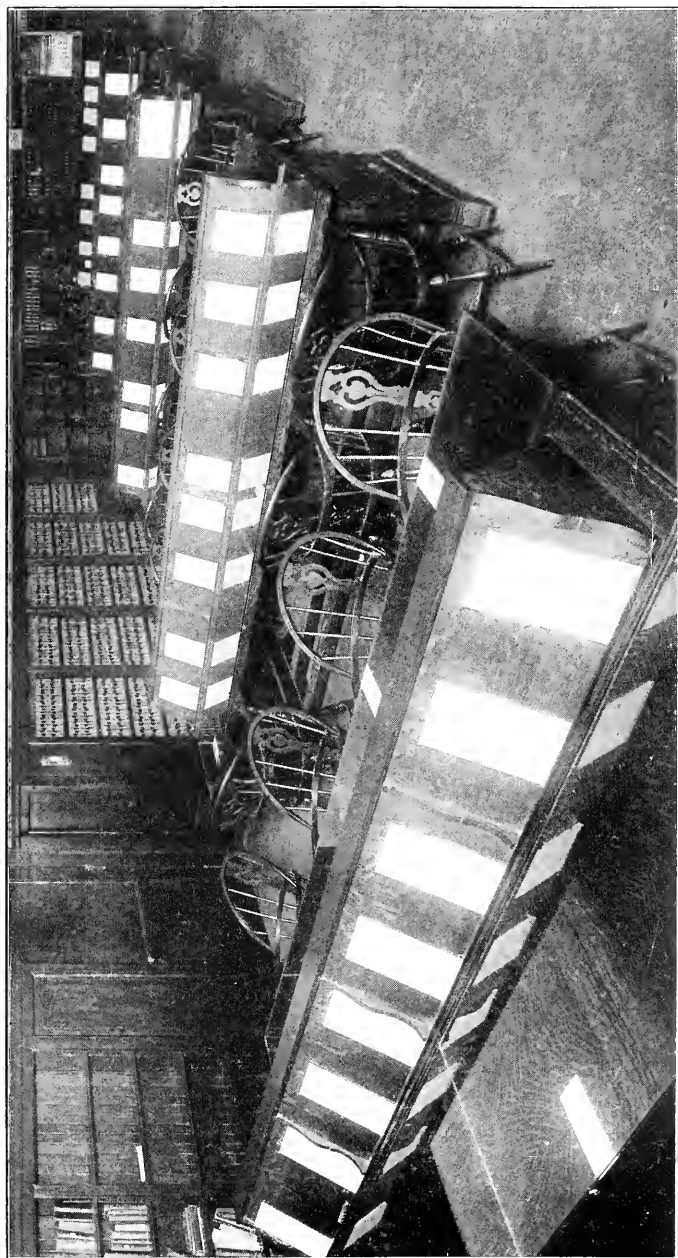
have become known to thousands of men and have led to the heavy attendance in reputable law schools.

For a great many years Massachusetts has maintained two of the most prominent day law schools in America,—those at Harvard University and Boston University. There are, however, a large number of ambitious and competent men who, because of their employment during the day, cannot enter these universities, and who nevertheless desire the best equivalent. Through the coöperation of three of the leading teachers and practitioners of law, the Association Evening Law School, now known as Northeastern College School of Law of the Boston Young Men's Christian Association, was established and developed. Its success has been noteworthy and has earned for it the warm commendation of those familiar with the facts. Being part of a great educational system and wholly devoid of commercialism, it has been able to establish standards and maintain a grade of requirements which have won for it a high position among American law schools. Its methods are progressive, modern, and in accordance with the best practice. Its Faculty are honor men of the great day schools who have not only graduated with high rank after completing an extended course in the university and law school, but who have achieved success in the profession. The notable list of men on the Faculty attests to the quality of work done by the School and the esteem in which it is held by the members of the bar.

All the Association schools are absolutely non-sectarian; men of good character, regardless of their financial standing, social standing or creed, are admitted on an equal footing.

Close investigation is invited by all those interested in the study of law, and every opportunity will be afforded to inspect thoroughly the School, its methods, courses of study, past examination papers, and lists of graduates and their present occupations.

The various school reports, alumni letters and other sources of information show that our graduates continue to make good when they get out into actual life-work. Many of them hold highly responsible positions on the bench, before the bar, and in business and political life.



LAW LIBRARY

Historical Review

Northeastern College School of Law was established in 1898 in response to a demand for a school which should be so thorough in its work, and conducted on such a high plane, that its graduates would stand well at the bar and be recognized as men of professional attainment and ethical standards.

Every effort has been made to establish and maintain high standards of entrance and graduation. In order that those desiring a short cut to the bar might be deterred from entering, a four years' course was announced at the outset.

The student body consists of men of ability who devote themselves to their work with marked fidelity, and upon graduation pass the bar examinations successfully and enter practice.

The School was established through the coöperation of the late Hon. James R. Dunbar, the late Prof. James Barr Ames, Dean of the Harvard Law School, and Mr. Samuel C. Bennett, then Dean of the Boston University Law School. Under the direction of this board of advisers the School was organized.

Successful Career

Being thus auspiciously inaugurated, the first evening law school of Massachusetts entered upon what has proved to be a most successful career. Thirty-six hundred and thirty-five students have been enrolled, including clerks from the offices of leading attorneys; clerks and officers from every court in Boston; state, city, and government officials; teachers and students from other law schools; and a large number of able men engaged in different lines of business.

Incorporation

In January, 1904, a bill was introduced into the Massachusetts Legislature seeking the incorporation of the School, with the power to grant the degree of Bachelor of Laws. The rapid passage of this bill by the legislature, and the cordial recognition and endorsement of the School by the bench, the bar, and

the heads of our great day law and other professional schools, testify in no uncertain terms to the position the School occupies in the educational activities of the Commonwealth.

High Standards

The work of the past twenty-one years has been characterized by strict and impartial administration, expert instruction, and devotion on the part of the students. The success of our graduates in passing the Massachusetts bar examinations, nearly 90 per cent of them having been successful in this and other states, and later in practice, has amply justified what may at times have seemed to be undue severity.

If passing the bar examination were the only end to be attained, the work would be less difficult; but reputable institutions concern themselves much more with the future prospects of their students than with the fitting of any number of them for certain tests; and to this end the courses herein announced were arranged to duplicate as nearly as possible those of the best day law schools.

The study of law requires diligent application and regular attendance at the lectures and other exercises of the School; it requires also a large amount of reading and thought in order to qualify the student to comprehend clearly and to assimilate properly the many difficult problems presented. A successful lawyer must have not only a thorough knowledge of the law, but the power to apply that knowledge in each particular case, no matter how complicated the conditions may be. It is the latter phase of this requirement of the profession that makes hasty preparation of so little value to one who hopes to be successful in active practice; for, though he may in this hurried way gain admission to the bar, he will be incompetent to give counsel worthy the name.

Students upon enrollment agree to conform to the existing rules and schedules of the School and to such amendments and additions thereto as the School authorities may see fit to establish during such enrollment.

Method of Instruction

There are three methods of instruction employed by law schools: the lecture method, in which the instructor gives a presentation exercise and assigns cases to be read in relation thereto; the case method, in which are assigned cases to be read in advance, and later discussed and commented upon in class; and a combination of these two systems, in which the instructor's lecture or presentation of the essentials is followed by the discussion of cases previously read.

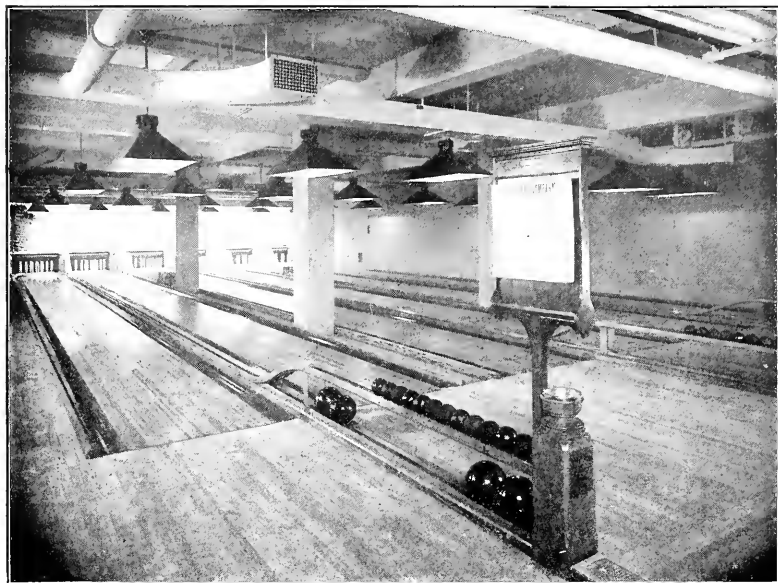
Twenty-one years' experience had led the School of Law to adopt a modification of the third method, namely: lecture, citation, and discussion, supplemented with written tests and systematic quizzes. The value of this method is clearly demonstrated by the success of our students at the bar examinations and later in practice.

The New Year

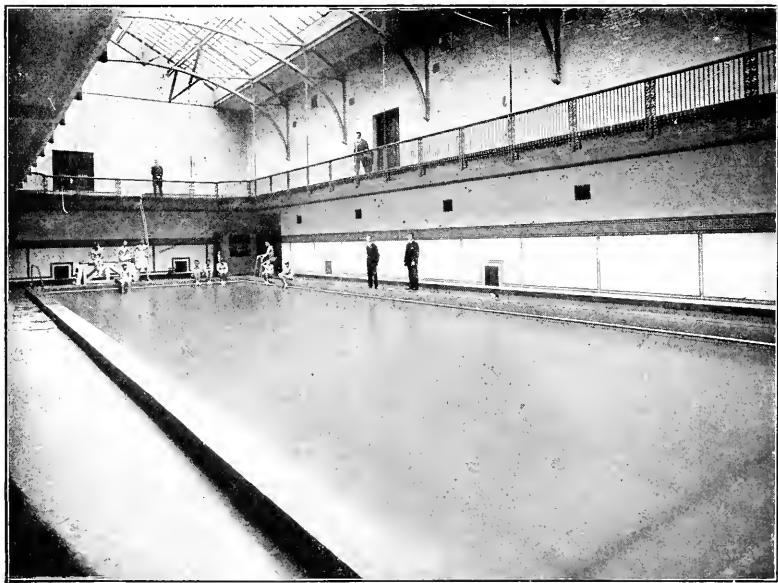
The School enters upon the work 1919-20 better housed, equipped and organized than ever before. The Faculty includes several additions of prominent practitioners who have achieved success in teaching and practice.

Greeting

Students who desire the best, and are willing to sacrifice and work for a great ideal, are invited to join our ranks. Success has come in large measure to the hundreds who have completed our courses, graduated, and entered practice. It will come to you, if earned. Our pleasure and privilege is to extend the hand of fellowship and assistance.



BOWLING ALLEYS



POOL

Requirements for Admission

Character

Applicants for admission to the School must present satisfactory evidence of moral character.

Academics

Graduates of colleges, technical schools, and four-year courses in day high schools of good standing are admitted without examination upon presentation of certificate or diploma.

Applicants who have done some work in a high school, but not enough to receive a diploma, must present credentials covering such work. The Committee on Admission will pass upon the credentials, allow credit for work in the subjects listed below done to the satisfaction of the Committee, and, if sufficient work has not already been done, will prescribe from the subjects listed below enough to fulfill the Law School requirements.

The status of all other applicants will be determined by the Committee after consideration of the facts in each case.

Examinations will be arranged for those who have a knowledge of academic subjects but are unable to furnish credentials covering the same.

Credit for work in the subjects listed below aggregating at least eight points is required as the academic basis of our degree. A point represents work in a given subject covered in one hundred and twenty recitation hours. Eight points represent usually two years' work in standard day high schools offering a four-year course.

Required

English

Elective

Algebra

Botany (adv'd)

Chemistry (adv'd)

English

Economics

French

German

Greek

Government

Geometry

History

Latin

Logic

Physics (adv'd)

Psychology

Spanish

From the foregoing it will be noted that credit is allowed for work of a college nature as well as for work of a preparatory school nature. Applicants who have conditions to work off are usually well qualified to do work in college courses, such as Government and Economics; and such work is deemed more practical for them than work of a secondary school character.

Enrollment

Owing to the delay each year on the part of the students, and the consequent rush on the opening night, those desiring admission are requested to register during the two weeks previous to the opening of the School.

For the application blanks for admission to the School, or for further information, address the Dean of the Law School.

It is of the greatest importance that students attend the lectures and receive credit therefor. In order to receive attendance credit students must enroll and arrange with the Bursar as to the payment of their tuition. After the application blanks have been filed in the office of the Law School, letters have to be written and credentials have to be obtained and acted upon before the students' status can be determined. This proceeding necessarily requires days and sometimes weeks. Manifestly students should not wait for the status reports but should enroll at once.

Academic Conditions

Less than ten per cent of the men of America graduate from high schools. When any of the remaining ninety per cent, after school age, wish to take up a profession, they find it necessary to make up more or less high school work. In instances of this sort the student's individual case is considered, and by permission of the School authorities he enters the Law School conditioned in academics; and while taking the regular work with his class, he remains under this classification until his academic conditions are wholly removed.

Law schools and colleges dealing with students who come directly from the high school and who have been prepared specifically for college examinations, have been quite arbitrary in

their admission requirements; but they are becoming less so, are allowing substitutions and equivalents, and, instead of barring out worthy young men, are taking a much more lenient attitude and encouraging their attendance. Northeastern College School of Law seeks to be as helpful as possible to men who have been deprived of extensive educational opportunities; and is justified by experience in admitting those who, though not fully prepared along academic lines, are, in the opinion of the Faculty, men of promise, aptitude, and ambition, and willing to meet all requirements.

The School authorities, while obliging every student who is a candidate for the degree to remove all academic conditions before entering the Senior Class, except when specially excused, admits capable men who are not high-school graduates and then, through Northeastern Preparatory School, enables them to make up these deficiencies in a thoroughly satisfactory manner. The wisdom of this procedure has been shown by the high degree of scholarship displayed by such students, the ease with which they have passed the bar examinations, and their success in the profession.

No student who fails on account of academic conditions to receive his degree in due course will be permitted, except by special vote of the Faculty, to remove his conditions later than two years after the graduation of his regular class.

Northeastern Preparatory School, attended by over one thousand students, has been in operation for many years and has fitted men in large numbers for the college, the university and the bar. Its diploma is accepted by the Bar Examiners and its certificates by the College Entrance Board. The school is in operation throughout the entire year, making it possible for law students to remove their academic conditions when the Law School is not in session. A special pamphlet is issued by this school and may be obtained upon application. Appointments are made by addressing Northeastern Preparatory School, or by telephoning Back Bay 4400.

Removal of Academic Conditions

No student will be allowed to enter the Senior Class of the Law School with any academic conditions, except by special permission of the School authorities. Request for such permission should be made promptly and in writing.

Advanced Standing

Candidates for admission to advanced standing will file their applications and credentials regarding previous study of law with the Dean. After due consideration of the standing of the school and the nature and extent of the applicant's attendance and scholarship thereat, the School authorities will apprise the applicant of his status as a student upon entering the Law School.

Law Conditions

No student who has more than one law condition standing against him on the work of the first two years will be allowed to register as a regular third-year student, and no student having any law condition will be admitted as a regular student to the fourth year. He may, however, although registered as a third-year student, take and be credited with a limited number of fourth-year subjects, the number varying according to the number of his conditions.

No student who fails on account of law conditions to receive his degree in due course will be permitted, except by special vote of the Faculty, to remove his conditions later than two years after the graduation of his regular class.

Attendance Upon Lectures

It is highly desirable that the student attend every lecture given in every course.

The student must attend at least one-half of the lectures in a course in order to be permitted to take the examination therein. No excuse is available against this rule.

If the student attends at least three-fourths of the lectures in a course, he is entitled to take the examination therein and to pass at 60.

If the student attends between one-half and three-fourths of the lectures in a course, he must furnish satisfactory excuse to the Committee on Attendance for the absences under three-fourths in order to be permitted to take the examination therein; and, further, he must attain a grade of 70 in order to pass in such examination.

A student must make an aggregate attendance of at least two-thirds of all the lectures scheduled for him in a given year in order to be enrolled the year following as a regular student.

A student must make an aggregate attendance of at least two-thirds of all the lectures scheduled for him in his entire curriculum in order to qualify in attendance for his degree. No excuse is available against this rule.

In order to receive credit for attendance at a lecture, a student must be present in the classroom during the entire lecture period, unless upon satisfactory excuse his presence for a shorter period is accepted by the Committee on Attendance.

It will be noted from the foregoing that attendance affects the student in two ways, viz., (1) in qualifying to take examinations in his respective courses, and (2) in qualifying for the degree.

Once a month each student receives from the Registrar a report which shows in detail his attendance situation to date.

The required period of attendance at the School is four years. One or two years' attendance at an accredited three-year day law school or an accredited four-year evening law school may be counted as a part of the four years.

Examinations

One examination is regularly given in each course at the close thereof. Examinations scheduled at the end of the first half-year courses are called mid-year examinations; and those scheduled at the end of the second half-year courses and at the end of the full-year courses are called final examinations.

One make-up examination is regularly given each year in each course, those in Senior subjects in the spring and those in Junior, Sophomore, and Freshman subjects in September. (See schedule for September, 1919, on page 3.) Moreover, a student may take as a make-up any mid-year or final examination regularly given in a course in which he is conditioned.

A student who fails in the mid-year or final examination in a given course receives credit for only 60, even if he obtains a higher grade in a make-up examination in that course.

If a student for good cause does not take the examination given at the close of a course, he will be permitted to take it any time thereafter when an examination in that subject is regularly scheduled; and since that will be his first examination therein, he will receive full credit for whatever grade he attains.

The receipt of a passing mark in a course precludes a student from another examination therein.

In case of sickness or other unavoidable cause, a student may take any of the above regular examinations at the same time, but apart from the rest of the students taking it, provided he makes arrangements for so doing with the Dean sufficiently in advance and pays \$2.00 for the services of a proctor, together with the cost of transportation of the proctor to and from the place of accommodation.

A special examination is given only in the case where a student because of sickness is prevented from taking the last mid-year, final, or make-up examination regularly scheduled in a subject before the Commencement at which he is a candidate for the degree. The student so accommodated will reimburse the School in the sum of \$12.00, the cost of drafting the questions and providing proctor services.

In order to be permitted to take an examination in a course, the student must qualify in attendance thereat.

All examinations must be written in ink.

Monthly Tests

It is not enough for a lawyer merely to know the law; he must be able to make practical application of such knowledge. To be of greatest use, a lawyer needs to know how to express

himself clearly on paper as well as in speech. He must acquire the ability to draw up contracts, wills, and other legal documents in such manner as to reduce to a minimum the use of words and expressions which in themselves are uncertain, indefinite, and generally debatable, or which become so because of faulty use; for such loose practices are the cause of much litigation and prove frequent boomerangs for the careless lawyer or the lawyer ill-founded in written expression.

In order to develop the student's power of logical continuity of thought and of clear and accurate expression, a system of tests is maintained whereby once in each month every student is required to take an examination upon a subject chosen by the various instructors as being of special importance in their respective courses. The students in these tests are marked not only upon the law but also upon the form, namely, the spelling, grammar, composition, and neatness.

Every student is urged to visit the Dean's office, inspect his corrected paper, and receive a personal interview upon the same; and those students whose work is unsatisfactory are required to make such visits. This opportunity for personal interview in the office of the Dean is availed of very generally by the student body, and aside from producing marked improvement in the student's written expression and in his mental attitude in the study and application of the law, it furnishes a valuable meeting-ground between the student, the Faculty, and the Executive Staff.

One test is regularly given in each course during the progress thereof. Ten points are obtainable in the test toward the student's standing in the course in which it is given, the remaining ninety points being obtainable for the work in the regular examination therein.

If a student for good cause does not take the monthly test given during the progress of a first-, second-, or third-year course, he will be permitted to take it any time thereafter when a monthly test in that subject is regularly scheduled; and since that will be his first test therein he will receive full credit for whatever grade he attains.

The receipt of six points in a test in a course precludes a student from another test therein.

If a student receives less than six points in the monthly test given during the progress of a first-, second-, or third-year course, he will be permitted to take it again any time thereafter when a monthly test in that subject is regularly scheduled; but he will receive credit for only six points, if he obtains a higher grade therein.

Inasmuch as Seniors who did not take the regular monthly tests in fourth-year courses, or who received less than six points therein, will not have the opportunity to take the monthly tests regularly given in those courses in subsequent years, make-up tests in all fourth-year courses will be scheduled the latter part of each year.

In case of sickness or other unavoidable cause, a student may take any of the above regular or make-up tests at the same time, but apart from the rest of the students taking it, provided he makes arrangements for so doing with the Dean sufficiently in advance and pays \$2.00 for the services of a proctor, together with the cost of transportation of the proctor to and from the place of accommodation.

A special test is given only in the case where a student because of sickness is prevented from taking the last regular or make-up test regularly scheduled in a subject before the Commencement at which he is a candidate for the degree. The student so accommodated will reimburse the School in the sum of \$3.00, the cost of drafting the questions and providing proctor service.

As in the case of all examinations, these tests must be written in ink.

Marks

If the student attends at least three-fourths of the lectures in a course, he is entitled to take the examination therein and to pass at 60.

If the student attends between one-half and three-fourths of the lectures in a course, he must furnish satisfactory excuse to the Committee on Attendance for the absences under three-fourths in order to be permitted to take the examination therein; and, further, he must attain a grade of 70 in order to pass in such examination.

Ten points are obtainable in the monthly test toward the student's standing in the course in which it is given, the remaining ninety points being obtainable for the work in the regular examination therein.

With respect to grade, a student is entitled to a degree if he obtains at least 60 in all courses scheduled in the entire four-year curriculum or if, failing in one Senior subject, he obtains an average of at least 65 in all courses so scheduled; provided always that his attendance is such as not to require 70 as passing mark.

A student qualifies for *cum laude* distinction if he obtains an average of at least 80 in all courses scheduled in the entire four-year curriculum.

Grade reports are mailed to the students from the office of the Recorder.

Requirements for the Degree

In order to qualify for the degree of Bachelor of Laws, a student must meet the following requirements:

Be twenty-one years of age at time of receiving the degree.

Fulfill the academic requirements.

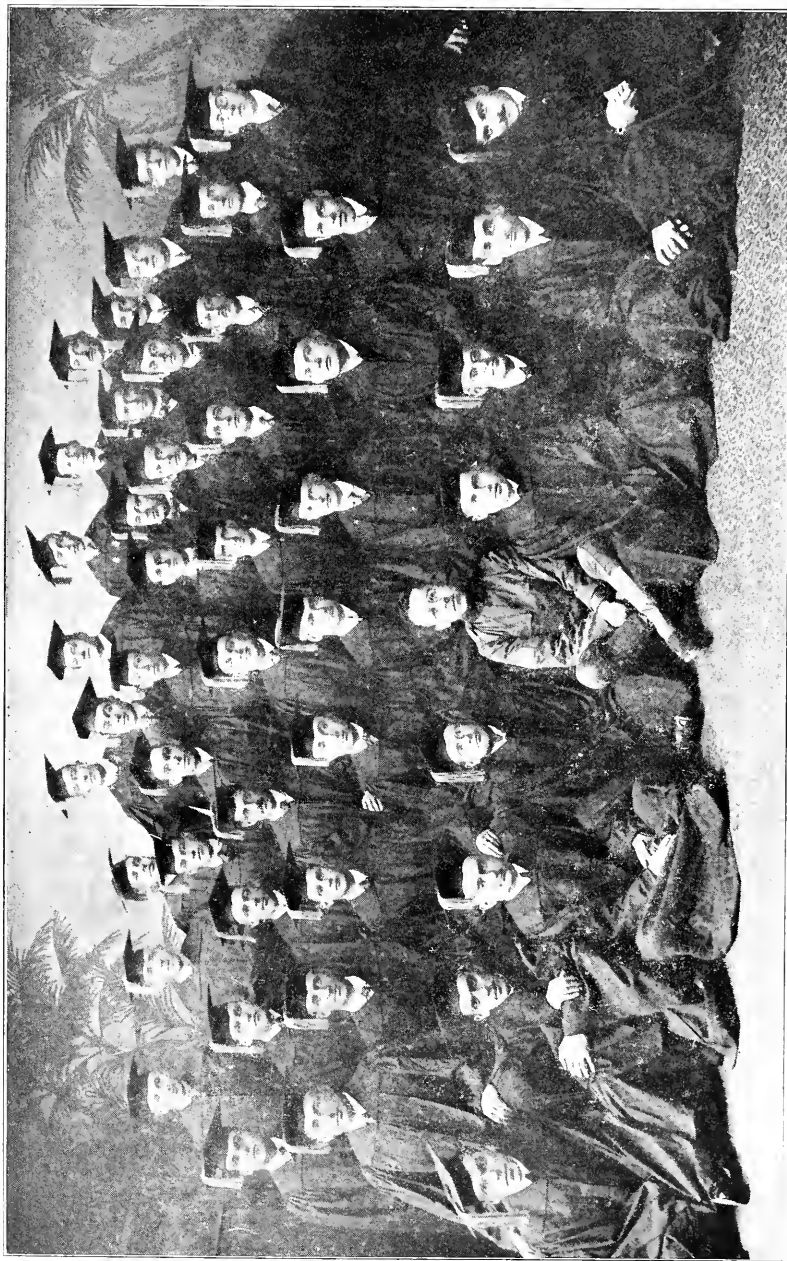
Make the required attendance upon lectures.

Obtain the required marks in all courses scheduled for the degree.

Note. Candidates for graduation should file their applications in the Law School office not later than January 15 of the year in which they plan to receive their degree.

Certificates

Every person who, while a member of the School, passes a satisfactory examination in one or more subjects, will be entitled to a certificate, stating the length of time he has been a member of the School, and specifying the subjects in which he has passed.



CLASS OF 1918

PROGRAM OF INSTRUCTION

FIRST HALF-YEAR

	LAW I	LAW II	LAW III	LAW IV
Monday	TORTS Professor Storer 7.00-8.30	PROPERTY I Mr. Kneeland 7.00-8.10 CIVIL PROCEDURE at COMMON LAW Mr. Holliday 8.20-9.30	PARTNERSHIP Mr. Gray 7.00-8.30	MASSACHUSETTS PRACTICE Assistant Dean Allen 7.00-8.30
Tuesday	CONTRACTS Professor McLellan 7.00-8.30			
Wednesday		BILLS and NOTES Professor Parke 7.00-8.30	EQUITY II and SURETYSHIP Mr. Hitchcock 7.00-8.30	EVIDENCE Professor Storer 7.00-8.30
Thursday	CRIMINAL LAW Mr. Barrett 7.00-8.30			
Friday		EQUITY I Mr. Blackman 7.00-8.30	CORPORATIONS Professor Newton 7.00-8.10 WILLS Professor Newton 8.20-9.30	CONSTITUTIONAL LAW Professor Dornan 7.00-8.10 PROPERTY III (1st part) Professor Newhall 8.20-9.30

SECOND HALF-YEAR

	LAW I	LAW II	LAW III	LAW IV
Monday	TORTS Professor Storer 7.00-8.30	PROPERTY I Mr. Kneeland 7.00-8.30	PROPERTY II Mr. Johnson 7.00-8.30	BANKRUPTCY Assistant Dean Allen 7.00-8.30
Tuesday	CONTRACTS Professor McLellan 7.00-8.30			
Wednesday		SALES Professor Parke 7.00-8.30	EQUITY II and SURETYSHIP Mr. Hitchcock 7.00-8.30	EVIDENCE Professor Storer 7.00-8.30
Thursday	AGENCY Judge Allen 7.00-8.30			
Friday		EQUITY I Mr. Blackman 7.00-8.30	CORPORATIONS Professor Newton 7.00-8.30	PROPERTY III (2d part) Professor Newhall 7.00-8.30

Outline of Courses

FIRST YEAR

Torts

(Thirty-two Lectures)

General principles; assault and battery; false imprisonment; trespass; conversion; slander and libel; enticement and seduction; deceit; slander of title; malicious prosecution; negligence, and incidental points.

Bigelow on Torts.

Ames' and Smith's Cases on Torts.

Chase's Cases on Torts.

Simpson's Cases on Torts.

Contracts

(Thirty-two Lectures)

Offer and acceptance; consideration; performance of, or promise to perform non-contract obligation as consideration; moral obligation as consideration; antecedent act or agreement as consideration; parties to a contract, including aliens, executors and administrators, guardians, infants, insane persons, intoxicated persons and married women; omitting agents, corporations and partners on account of these subjects being given in other courses; contracts under seal, including the form, requisites thereof, delivery and the matter of consideration; rights of beneficiaries under a contract; rights of assignees of a contract; conditional and unconditional contracts; rescission of contracts; damages for breach of contract; illegality; duress; mistake; statute of frauds; quasi-contracts.

Keener's Cases on Contracts, second edition.

Criminal Law

(Sixteen Lectures)

Sources of criminal law; nature of crime; common law and statutory offenses; criminal acts; intent in general, and as affected by circumstances, such as insanity, intoxication, in-

fancy, coercion, ignorance or mistake; justification; necessity; agency; consent; condonation; contributory acts; domestic relations; parties in crime; jurisdiction.

Crimes against the person; against property; against public policy; health; peace; justice; decency and morality.

Criminal procedure; arrest; extradition; examination and bail; indictment and criminal pleading; trial; evidence; proceedings after verdict; error.

Beale's Cases on Criminal Law, third edition.

Agency

(Sixteen Lectures)

Capacity of the parties to the relation; creation of the relation; authority of an agent; manner of execution of authority; effect of relation as between principal and agent, between agent and third persons, and between principal and third persons; ratification; duration and termination of the relation.

Wambaugh's Cases on Agency.

Meehem's Cases on Agency.

SECOND YEAR

Property I

(Thirty-two Lectures)

Distinction between real and personal property; nature and acquisition of rights in personal property; acquisition of rights not under former owner; transfer of rights in personal property; possession of personal property; real property; tenure in general; division of estates; seizin and conveyances to uses and trusts; fixtures; emblements; waste; border trees; rights in another's land; natural rights; easements; covenants running with the land; public rights; franchises; rents.

Gray's Cases on Property, Vols. I and II (second edition).

Equity I

(Thirty-two Lectures)

History, nature, and limits of the jurisdiction; the jury in equity; the maxims; assignments; equitable rights, including

accident and mistake, fraud, notice, estoppel, conversion, adjustment of liabilities; equitable remedies, with particular attention to specific performance and injunctions; reformation and rescission, account, and other pecuniary remedies.

Ames' Cases in Equity Jurisdiction, Vol. I.

Barney's Equity and Its Remedies.

Bills and Notes

(Sixteen Lectures)

The provisions of Revised Laws of Massachusetts, Chapter 73 (Negotiable Instruments Law). Formal requisites of negotiable and non-negotiable bills of exchange, checks and notes; obligations and rights of the various parties to such instruments, makers, acceptors, drawers, drawees, payees, indorsers and indorseees; suits upon bills and notes; pleading and defenses, accommodation paper; guaranty and generally of the transfer, indorsement and extinguishment of bills and notes.

Revised Laws of Massachusetts, Chapter 73.

Colson's Hufcut on Negotiable Instruments, second edition.

Norton on Bills and Notes, fourth edition.

Sales

(Sixteen Lectures)

Sales and mortgages of personal property; subject matter of sales; when title passes; risk of loss; rights and remedies of seller and buyer in executed, executory and conditional contracts of sale; warranties of title and quality; seller's lien and stoppage *in transitu*; bills of lading and other documents of title; fraud; statute of frauds; factors and recording acts; actions and defenses.

Pamphlet of Sales Act, Massachusetts Acts of 1908, Chapter 237, and of Bills of Lading Act, Massachusetts Acts of 1910, Chapter 214.

Woodward's Cases on Sales.

Tiffany on Sales, second edition.

Williston on Sales, 1909 edition.

Burdick on Sales, third edition, 1913.

Civil Procedure at Common Law

(Sixteen Lectures)

Procedure from the original writ to appeal and review of judgment; how a right may be enforced and a remedy obtained in the courts; venue of actions; forms of actions, local and transitory, real, personal and mixed; original and judicial writs; pleadings, their necessity, uses, forms and rules by which they are governed; the effect of pleadings in conduct and results of the trial; protection of rights of the parties before, during and after trial, and before and after judgment; revision of proceeding, exceptions, appeal and review.

Scott's Cases on Civil Procedure.

THIRD YEAR

Equity II and Suretyship

(Thirty-two Lectures)

Nature and requisites of a trust; a trust distinguished from a debt; constructive and resulting trusts, charitable trusts, etc.; language necessary to create a trust: consideration: the Statutes of Frauds and Wills; subject matter of a trust; the *cestui que* trust; the trustee; nature of the *cestui que* trust's interest; transfer of trust property, rightful and wrongful; extinguishment of a trust; duties of the trustee.

Ames' Cases on Trusts.

Scott's Cases on Implied Trusts.

Comprising the rights and obligations subsisting among the three parties involved in a suretyship transaction, namely, principal obligor, surety and creditor.

Ames' Cases on Suretyship.

Property II

(Sixteen Lectures)

Acquisition of real property inter vivos. Accretion; adverse possession; prescription; form of conveyances at common law; deeds,—description of property granted, boundaries, estates created, incorporeal hereditaments, covenants for title, estoppel by deed, execution, delivery; dedication; examination of titles.

Gray's Cases on Property, Vol. III (second edition).

Wills

(Sixteen Lectures)

History of wills; descent of property; kind of wills; testamentary power; who may make a will; what may be given away by a will; who can be beneficiaries under a will; mental capacity to make a will; insanity; lunacy; contract to make a will; form of will; incorporation by reference of outside documents; execution of will, that is, signing, witnessing, publication; mistake; fraud; undue influence; methods of revoking will and effect of same; republication of will; grant of probate and administration; the estate of executor or administrator; legacies; distribution; construction.

Costigan's Cases on Wills.

Gray's Cases on Property, Vol. IV (second edition).

Corporations

(Thirty-two Lectures)

Nature of a corporation; difference between corporation and partnership; distinction between stockholders and corporation; promotion of corporations; formation of corporations; corporations *de jure*; corporations *de facto*; dissolution of corporations; interpretation of charters; powers of a corporation; doctrine of *ultra vires*; liability for torts and crimes; corporation and the state; shares of stock, dividends; rights of stockholders; stockholders' liabilities; voting rights of stockholders; voting trusts; rights and liabilities of directors and officers; rights and remedies of creditors against property of corporations; foreign corporations.

Canfield and Wormser's Cases on Private Corporations.

Partnership

(Sixteen Lectures)

The creation of a partnership; incidents of partnership; the partnership property and the interest of a partner therein; rights and remedies of creditors; the power of a partner to act

in behalf of the partnership before and after dissolution; rights and duties of partners *inter se* and actions between partners; dissolution and termination of partnership; unincorporated associations.

Ames' Cases on Partnership.

Gilmore on Partnership.

Lindley on Partnership.

FOURTH YEAR

Evidence

(Thirty-two Lectures)

Judicial notice; judge and jury, or law and fact; burden of proof; presumptions; admissions; confessions; principles of exclusion; relevancy; character evidence; hearsay evidence and exceptions thereto, including declarations as to matters of pedigree, matters of public interest, public records, declarations in regular course of business, account-books, declarations against interest, *res gestae*, dying declarations, declarations made under oath, declarations showing physical or mental conditions; opinion evidence; best evidence; writings as evidence; examination of witnesses.

Greenleaf on Evidence.

McKelvey on Evidence.

Thayer's Cases on Evidence.

Wilgus's Cases on Evidence.

Wigmore's Cases on Evidence.

*Property III (first part) **

(Twelve Lectures)

Mortgages; landlord and tenant; joint ownership.

Jones on Mortgages.

Hall on Landlord and Tenant.

Crocker's Notes on Common Forms.

*Property III (second part)**

(Twenty Lectures)

Conditional and future interests in property, including re-versions and remainders; rule against perpetuities; forfeiture and restraints on alienation; probate law and practice.

Gray's Cases on Property, Vols. V and VI.

Gray's Rule against Perpetuities.

Gray's Restraints on the Alienation of Property.

Fuller's Probate Law.

Newhall's Settlement of Estates.

* Property III (first part) and Property III (second part) are treated as entirely separate courses with respect to attendance, examinations, monthly tests, etc.

Constitutional Law

(Sixteen Lectures)

Written and unwritten constitutions; history and sources of written constitutions in the United States, state and national; establishing and amending constitutions; distribution of powers between the national and state governments; distribution of powers among the three departments; the judicial department; nature of judicial power; jurisdiction of the federal government, criminal and civil; express, implied, resulting and inherent powers; functions of administrative officers; citizenship; civil and political rights; the police power; the right of eminent domain; taxation; impairment of contracts, *ex post facto* and retrospective legislation generally; regulation of commerce.

Thayer's Cases on Constitutional Law.

Hall's Cases on Constitutional Law.

Cooley's Principles of Constitutional Law.

McClain's Cases on Constitutional Law.

Massachusetts Practice

(Eighteen Lectures)

Courts in Massachusetts and jurisdiction of each; venue of actions, local and transitory; writs, including service of same; arrest on mesne process and on execution; attachment on mesne

process and by trustee process; what property is exempt; entry of actions; appearances, non-suit and default; pleadings, including declaration, answers, demurrers, etc.; set-off, recoupment and cross actions; tender; offer of judgment; interrogatories; depositions; masters and auditors; trial; exceptions; motions for new trial; motion to vacate judgment; writs of review, error and *audita querela*; appeals; execution; replevin; summary process to recover land; writ of entry; mechanics' lien; extraordinary writs; Statute of Limitations; equity pleading and practice; probate practice; marriage and divorce.

Buswell and Walcott on Massachusetts Practice.

Bankruptcy

(*Fourteen Lectures*)

History of bankruptcy legislation, state and national; extent and operation of state insolvency laws; who may become a bankrupt; who may be petitioning creditors; acts of bankruptcy, including fraudulent conveyances, preferences and assignments for the benefit of creditors; what property passes to the trustee; dissolution of liens; what claims are provable against the bankrupt's estate; duties and powers of the trustee; duties of the bankrupt; discharge from bankruptcy; compositions in the bankruptcy court; bankruptcy procedure.

United States Bankruptcy Act of 1898, with amendments.

Williston's Cases on Bankruptcy, second edition.

Supplementary Instruction

Quizzes

In addition to the formal lectures, the students meet regularly throughout the year for a systematic review of the material covered by the regular lectures. These quizzes are conducted by experienced instructors.

Students are also encouraged to form quiz clubs among themselves, since in law, as in other branches of knowledge, discussion develops mental power.

Public Speaking

The ability to speak in public is of very great value to a lawyer in the handling of juries, dealing with clients, and making addresses. Appreciating fully the great need of practical instruction of this character, the School provides a means whereby the student may learn how to come to his feet confidently in the presence of large numbers, and forcefully and without trepidation to give oral expression to his thoughts.

This work is in charge of a skillful instructor who has had extensive experience in public speaking and who is familiar with Debating and Parliamentary Procedure. The course is held at an hour which does not conflict with the regular Law School work. Duly enrolled members of the Junior Class are permitted to attend the complete course without additional expense.

Moot Court

In connection with his course in Massachusetts Practice, Assistant Dean Allen carries on a Moot Court. Actions are instituted in this court and carried through all the intermediate stages to final judgment in strict accordance with the practice prevailing in the State courts. Students are designated to act in the capacity of clerks, attorneys, parties and of others who regularly make up the personnel of the usual court organization.

Instruction of a most practical nature is thus given to the students in matters appertaining to practice. They are shown just what steps have to be taken preliminary to the trial and how to take them; they have the intricate procedure of the trial forcefully visualized for them; and they are made to carry out in full detail all measures which need to be taken supplementary to the trial in order to realize the benefits of a successful issue or to safeguard the rights of clients in case of an adverse decision.

In a word the purpose of our Moot Court is to give the students actual experience in using in a practical way the knowledge of the law which they get in the other courses of our curriculum.

Special Lectures and Special Courses

Special lectures are offered from time to time on subjects not included in the regular program of instruction. These lectures

are open to members of the Law School without additional expense.

Special courses are voluntary both as to attendance and the taking of examinations. Such courses are neither required for our degree nor allowed as credit toward it. However, when a student takes and passes satisfactorily a special course, such accomplishment becomes a part of his record and a certificate will be issued in proof thereof.

Bar Examination Review

Ample provision is made for reviewing the work of each year in our regular School schedules; and at the close of the full course—just previous to the bar examination—the whole field of the law is covered by a systematic review of great value to the students. Mr. Asa S. Allen, Assistant Dean of the Law School, is most effective in this review work, and his classes assembled for this purpose are largely attended, not only by our own students, but by graduates of the other New England law schools.

In order to make the work of our Law School as valuable as possible, an arrangement has been made whereby each regular member of the Senior Class may attend this review course without additional expense.

This opportunity for free instruction will be available to our students but once, and then only upon the presentation of a card of admission signed by the Dean. Graduates of other law schools who desire to take this review course will arrange therefor personally with Mr. Allen.

Notes

Realizing the great benefit in training as well as in acquiring a knowledge of the subject-matter itself which results from the thorough and systematic keeping of note-books of lectures and cases, the School authorities endeavor at all times to keep this fact forcibly before the minds of the students. Students will find that information as to notes and any other matters appertaining to their work will be gladly furnished to them upon application at the office of the Dean.

Pre-Legal Course

Northeastern College School of Liberal Arts offers an admirable course of study designed to round out the legal and academic knowledge of prospective and present law students and to insure for them a higher degree of success in their chosen life-work. Students are strongly urged to avail themselves as far as possible of this opportunity for special professional training. The pre-legal course contemplates four of the following subjects: but if the student has not time to devote to the full course, a fewer number of subjects may be taken to advantage. A certificate is issued to cover one or more subjects satisfactorily completed.

Program of Pre-Legal Course

1. *Logic*. A study of the mental processes that constitute good thinking, as attention and interest, observation, reflection, defining, assertion, proof, induction. Considerable time is spent in the critical analysis of arguments, with a view to developing the student's power of detecting fallacies and of consistent reasoning in debate.

2. *Public Speaking*. Study of the fundamentals of Public Speaking; delivery of short extracts from masterpieces of oratory, aiming to secure directness, earnestness, and dignity of address.

3. *Argumentation*. Lectures on the principles of debate. Text-book study. Practice in brief-drawing and discussion. Selection and arrangement of material. Principles involved in argument. Public presentation.

4. *Elementary Economics*. This course is intended as a survey of the entire economic field. Chief emphasis is laid on the fundamental definitions, laws, and principles. With these laws and principles as a basis, economic problems are discussed. Some of the important topics discussed are value, prices, profits, rent, interest, wages, money, banking, corporations, tariff, railroads, socialism, and taxation.

5. *Principles of Government and Government in the United States.* This is a course in practical citizenship and considers not so much theoretical government as actual government. Study is given to the text of the Constitution. The following subjects are emphasized: Units of representation, suffrage, party and machine, primary, majority, government, proportional representation, judiciary, colonial and territorial administration, foreign intercourse, commerce and transportation.

6. *Advanced American History.* A topical study of the leading events in the history of America.

7. *Elementary Law.* Outlines of Jurisprudence. Intended for students who expect to enter the profession of law, and for those who desire some knowledge of law for practical purposes. The aim of the course is to give a general view of the whole field of law, with an introduction to its terminology and its fundamental ideas.

Accounting and Kindred Subjects

In modern business the lawyer is required to have a broad experience in business organization as well as in legal affairs in order that he may analyze balance sheets, separate real from fictitious assets, and, in the case of bankruptcy proceedings, make a detailed study of conditions. Lawyers frequently serve as members of the boards of directors of corporations, and with a knowledge of accounting added to their legal training their services are doubly valuable.

The School of Commerce and Finance of Northeastern College aims to complete the education of the lawyer by training him in business affairs; and with that purpose in view offers reduced tuition rates to the Law School graduate. Those who have not the time to take the full course leading to the degrees of B.C.S. and M.C.S. may very profitably pursue special courses in accounting and kindred subjects.

General Information

Tuition

The rates of tuition are \$95.00 per year for the Freshman, Sophomore, and Junior years, and \$100.00 for the Senior year. Freshmen, Sophomores, and Juniors pay \$35.00 on entrance, \$30.00 on November 15, and \$30.00 on January 15; Seniors pay \$35.00 on entrance, \$35.00 on November 15, and \$30.00 on January 15. These fees include membership in the Association.

Single subjects when authorized will be charged for at the rate of \$35.00 for eight months' courses and \$25.00 for four months' courses, not including membership in the Association.

The tuition rates in effect during the school year 1918-1919 will continue to apply to those students who were enrolled in the Law School prior to Commencement of 1919, namely: \$85.00 for each of the first three years, \$90.00 for the fourth year, and \$30.00 and \$20.00 for the special courses.

Text-books

Text- or case-books are required in most of the courses. These books may be purchased by the student, or, if convenient, the books of the Law Library may be used in the building. It is advantageous for a student to own the books, in order that he may better employ his hours at home.

Note-books and general supplies may be obtained at the office at reasonable rates.

Law Library

The Law Library is located in the Administration Building, and is large, well-equipped and comfortably furnished. In it may be found case- and text-books on all of the subjects taught in the School, as well as on related subjects, the State Reports of Massachusetts and New York, the English Reports, United States Supreme Court Reports, etc. The Library is open daily from 9 A.M. to 10 P.M., and is kept thoroughly up-to-date.

Classrooms

The School has adequate classrooms with diffused light and comfortable furniture.

Dormitories

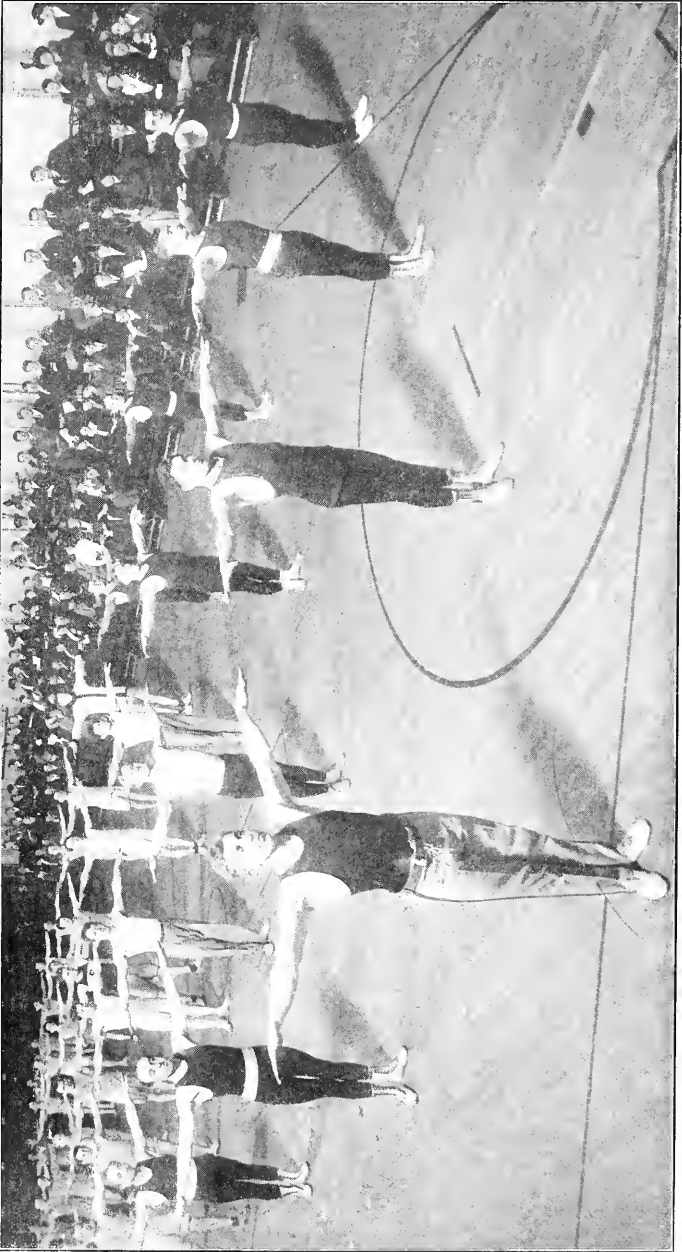
Nearly three hundred dormitories are provided where men may live with all the comforts of a great hotel. Students may enjoy any or all of these comforts at a minimum charge.

Physical and Recreative Opportunities

An enthusiastic and inexperienced man eager as soon as possible to gain admission to the bar will exclaim when the gymnasium or social features are mentioned: "I have neither time nor inclination for these; what I wish is the study of law first, last, and all the time." This attitude is perfectly natural, and we have heard the remark hundreds of times; but the point is not well taken and often leads to disastrous results. An employed man who is giving adequate service for his wages is tired when the day's work is over, and for him to add the burden of an evening school course of necessity implies an overload. Most men can carry this load without difficulty, however, if they adjust their lives to the new order of things, and take on, in addition to the school work, other features which offset the strain.

The study of law is a man's work, requiring close application, a clear head, and persistent effort. In order to do the work successfully, pass the examinations, and finish the four years in good physical condition, one must find time for physical exercise and a reasonable amount of recreation and social enjoyment.

This Law School is the only one of its kind which can meet these conditions fully, owing to its magnificent equipment and great diversity of features. The Law School is all that science, years of experience, high ideals, and careful attention to detail can make it; and it is backed by a physical department and social features of the most attractive and valuable nature. The hours are such that men may go from their business to the building, take some moderate exercise in the gymnasium, or a plunge in the pool, or a shower bath; and after a light lunch go to their classrooms with minds receptive, active and capable of obtaining all that the courses offer. We impress all our students with the necessity of a well-balanced program, mental, physical, and social; and hundreds of our men avail themselves of these advantages. Our gymnasium, the largest in New England, affords every opportunity for keeping in fine physical condition. The swimming pool, bowling alleys, billiard room, and general library, game rooms and special exercise rooms, fencing, boxing, indoor golf, all contribute to the development of the student.



GYMNASIUM

The Association restaurant supplies unusually satisfactory service at reasonable cost.

Reduced Gymnasium Rates to Students

In order to insure the use of the gymnasium to large numbers of students and to bring it within the means of all students, special reduced rates have been issued by the Department of Recreation and Health to the students of the School of Law.

Under the plan any student who has paid at least \$25.00 for courses of study in the Law School is entitled to the various gymnasium privileges at one-half their regular price. Students using the gymnasium under this arrangement have exactly the same privileges as do regular gymnasium subscribers except that the students are not permitted to use the gymnasium until 5.45 o'clock in the afternoon. This restriction works no injury to the general School body, because very few would be able or would care to use the gymnasium during the day.

Social Life of the School

Among the prominent and valuable features of our Law School is the opportunity for forming the acquaintance of influential men who are attending the Law and other Association Schools. Lectures, receptions and "get together" meetings occur throughout the year.

The Congress, consisting of an unusually able body of men, offers opportunities for debate, discussion, and extemporaneous speaking.

This Law School is the only evening school of the kind which provides the finest advantages for instruction and, at the same time, the attractive features found in the great universities. The student, therefore, not only obtains a thorough legal training, but enjoys these stimulating and refining influences by coming in contact with thousands of congenial, ambitious, and high-grade men who are pursuing the various branches of knowledge offered by the Association school-system.

Strikingly effective are these opportunities, and wholly unlike those of a small public or private school, which offers only the professional side of any subject, of necessity omitting the

social, physical, and recreative features so valuable in preserving a proper balance and symmetrical development.

The Northeastern College School of Law offers the advantages of a high-grade law school and a university and is irresistible in its appeal to discriminating men.

Building and Equipment

In the fall of 1913 we moved into our magnificent new building on Huntington Avenue, opposite the Opera House, the land, buildings, and equipment costing in the vicinity of one million five hundred thousand dollars. It is the finest group of buildings of the kind in existence, consisting of the

Administration Building

in which are located the lobby, administration offices, directors' room, committee rooms, library, reading and social rooms.

Bates Hall

seating five hundred, with a large stage and complete equipment.

Educational Building

One hundred and ninety-six by fifty-six feet, and six stories high, containing over thirty classrooms, laboratories, social and club rooms, and the small assembly hall.

Natatorium

containing one of the largest swimming pools in America. The pool is 75 feet long by 25 feet wide, is under a glass roof admitting floods of light and sunshine, and is supplied with filtered salt water.

Gymnasium

with running track, twelve laps to the mile, special exercise rooms, hand-ball and squash courts, indoor golf, six bowling alleys, shower baths, special rooms for fencing, wrestling, etc.

Industrial Building

containing machine shop, electrical laboratories and industrial plant.

Graduates

The following men have been granted the degree of LL.B. in previous years :

Class of 1902

Name	Residence	Passed Bar Examinations
Charles Bartlett.....	Boston	1901
*William Williams Bartlett.....	Roxbury	
Corrill Ellsworth Bridges.....	Charlestown	1902
Dennis Francis Buckley.....	Georgetown	1903
Timothy John Buckley.....	Charlestown	1902
Timothy Francis Collins.....	Arlington	1902
Frederick A. Gaskins.....	Milton	1903
William John Greene.....	Cambridge	1902
Mederic Guilbault.....	Medford	1903
George Latimer.....	Boston	1903
John Bailey Loring.....	Dorchester	1901
Charles Henry Lutton.....	South Boston	1902
Edward MacHarrie.....	Somerville	1902
*George Alexander McKinnon.....	Cambridge	1902
George Henry Magurn.....	East Boston	1903
William Peyton.....	Boston	1902
Joseph Louis Philip St. Coeur.....	Cambridge	1902
James Joseph Sheehan.....	Peabody	1902
James Boniface Vallery.....	Cambridge	1902

Class of 1903

Robert Ross Thompson Bower.....	Boston	1903
John Henry Coakley.....	Chelsea	1903
Arthur Lester Connolly.....	Boston	1903
Edwin Horace Cooley.....	Brookline	1903
Isidor Fox.....	Revere	1903
Walter William Graves.....	Salem	1902
Reginald Hainsworth.....	Cambridge	1903
John Edward MacKinnon.....	East Boston	1903
Francis Louis Maguire.....	Arlington	1903
Frederick William Otto.....	Dorchester	1902
George Whitehouse Reed.....	Roxbury	1903
Julian Seriaek.....	Dorchester	
John Speirs.....	Dorchester	1902

Class of 1904

Grosvenor Tarbell Blood.....	Newburyport	1904
Joseph Thomas Brennan.....	Cambridge	1904
Frederic Carroll.....	London, England	1904
Alfred Pugh Clark.....	Allston	1904
Charles Carthage Connor.....	New Bedford	1904
James William Dolan.....	Waltham	1904
Peter Jefferson Donaghue.....	Dorchester	1904
Michael Lawrence Fahey.....	Charlestown	1904

Name	Residence	Passed Bar Examinations
Carl Gerstein	Boston	1904
August George Gutheim.....	Washington, D. C.	1904
William Barton Jensen.....	East Boston	1904
Leo Sidney Jolles.....	Roxbury	1904
Louis Levin.....	Boston	1905
Thomas Francis Mansfield.....	East Boston	1904
George Yenetchi Parker.....	Charlestown	1902
Ralph Merrill Smith.....	Somerville	1904
Arthur Asher Sondheim.....	Roxbury	1904
Henry George Spence.....	Roxbury	1904
William Joseph Welch.....	Roxbury	1905
David White	Boston	1904
Jonathan Breck White.....	Watertown	1904

Class of 1905

John Joseph Attridge.....	Boston	1906
Walter Watson Chambers.....	East Dedham	1906
John McLean Crawford.....	Charlestown	1905
John Francis Dunn.....	Dorchester	1907
John Henry Ells.....	Dorchester	1904
Horace Porter Farnham.....	Peabody	1905
John Gregory Fortune.....	Malden	
Morris Burton Frankel.....	Boston	1905
Isaac Gordon.....	Boston	1905
Samuel Hurwitz.....	Roxbury	1905
Abram Hyman	Boston	1906
Bernard Charles Kelley.....	South Boston	1907
*Hugh Boniface McEachern.....	South Boston	1907
Leonard Wesley Parker.....	Boston	1906
*Joseph Albert Sedgwick.....	Quincy	
William Payson Smith.....	Dorchester	1905
Daniel Sullivan, Jr.....	Boston	
Ralph Lewis Theller.....	Cambridge	1911
Arthur William Vaughan.....	Somerville	1905
Alonzo Ernest Yont.....	Dorchester	1904

Class of 1906

Henry James Angell.....	California	1906
Sanford Bates.....	Dorchester	1906
Philip Anthony Brine.....	Somerville	1906
Dennis Francis Carpenter.....	Dorchester	
William Francis Connor.....	Waltham	1906
John Cornelius Cronin.....	South Boston	1906
Patrick Joseph Dowd.....	Waltham	1906
Michael Joseph Doyle.....	Boston	1906
*John Mix Finch.....	Everett	1907
Hamlet Samuel Greenwood.....	Lowell	1906
John Hamilton, Jr.....	Jamaica Plain	1907
Edward Warren Harnden.....	Boston	1906
John Michael Hayes.....	Dorchester	1906
Walter Lawrence Hobbs.....	Boston	1906
Albert Edward Hughes.....	Somerville	1907
*Charles Sumner Johnson.....	South Boston	
Thomas Kelley.....	Boston	1905
Percy Francis Lannon.....	Roslindale	1907

Name	Residence	Passed Bar Examinations
George Henry Locke.....	Colorado	
Francis Maloney.....	Charlestown	1906
James Alvin McKibben.....	Dorchester	1905
Peter Francis Minnock.....	Waltham	1906
Thomas Joseph Moloney.....	Charlestown	1906
Stephen Francis Morgan.....	Charlestown	1906
Hubert Aloysius Murphy.....	Dorchester	1905
John Quinn, Jr.....	Boston	1906
John Edward Quinn.....	Cambridge	1906
Ernest Orlando Raymond.....	Somerville	1906
Henry Burgess Roberts.....	Somerville	1906
John Francis Rogan.....	Charlestown	1905
Charles Henry Rogers.....	New York	1906
Samuel Rothblum.....	Dorchester	1906
Joseph Francis Sullivan.....	Charlestown	1906
John Foster Tufts.....	Watertown	1908
Arthur Lorrin Woodman.....	Cambridge	1906

Class of 1907

George Pomeroy Anderson.....	Boston	1909
*William Henry Barter.....	Dorchester	1907
*Charles Currier Beale.....	West Medford	1907
Roscoe Hosmer Belknap.....	Framingham	
Thomas Francis Brennan.....	Cambridge	1908
Michael John Carey.....	Somerville	1908
*John Joseph Coady.....	Dorchester	1906
Daniel Francis Cunningham.....	Brighton	1907
Maurice Francis Cunningham.....	Cliffondale	1907
Michael John Dennen.....	Winchester	1907
Daniel John Daly.....	Brookline	1907
John Henry Devine.....	Brighton	1907
Albert Coolidge Eames.....	Boston	1908
Walter Frank Foss.....	Norwood	
Harry LeRoy French.....	Waltham	1907
Martin Gilbert.....	Roxbury	1908
Dennis William Hagerty.....	Boston	1907
Daniel Melbourne Herlihy.....	Boston	1907
William Hirsh.....	Dorchester	1907
William Jason Holbrook.....	South Weymouth	1906
*John Hughes.....	Boston	
Fernald Hutchins.....	Dedham	1907
Loring Pierce Jordan.....	Boston	1907
Arthur Francis Keefe.....	Everett	1907
Thomas James Lawler.....	Dorchester	
Everett Charles Lewis.....	Medford	1907
Frederick William McEnery.....	Cambridge	1907
Bernard Francis Murphy.....	Waltham	1909
Edward Clarence Ramsdell.....	Brighton	1907
Daniel David Rourke.....	Boston	
Koran Calvin Small.....	Waltham	1906
William Joseph Stone.....	Dorchester	1908
Frank Brown Swain.....	Wollaston	1907
Edward Armstrong Thomas.....	Winthrop	1908
Henry Patrick Trainor.....	Waltham	1906
Abraham Hermann Weinstein.....	Boston	1906
James William Wickwire.....	Dorchester	1907
Edward Hermann Ziegler.....	Roxbury	1906

Class of 1908

Name	Residence	Passed Bar Examinations
Arthur Wykelham Ashenden.....	Dorchester	1909
Benjamin Franklin Beale.....	Boston	
Edward Sherman Bennett.....	South Boston	1908
Francis Henry Blackwell.....	Boston	1907
Robert Campbell.....	Boston	1908
Henry Elton Chamberlin.....	Boston	
Francis Aloysius Cronin.....	Roxbury	
William John Daly.....	Winchester	1907
John Bernard Dayton.....	Somerville	1908
James Michael Driscoll.....	Brookline	1907
James Edward Farrell.....	West Newton	1908
Charles Augustus Ferguson.....	Malden	1909
Edward Ferguson.....	Cambridge	1909
Edward Richard Flavell.....	Boston	
Wallace Alfred Gleason.....	West Roxbury	1908
Michael Aloysius Henebery.....	Worcester	1908
George Willard Hopkins.....	Concord	1909
Charles Edward Houghton.....	Hyde Park	1909
Morris Jolles.....	Roxbury	1908
Max Manuel Kalman.....	East Boston	1910
Richard Ernest Kent.....	East Boston	1908
Francis Warren Kimball.....	Chelsea	1908
*Howard Newton Legate.....	Roxbury	1908
Harrison Loring, Jr.....	Roxbury	1908
Edwin Tibbets Luce.....	Arlington	1908
Edward Aloysius McEttrick.....	Brookline	1907
*Charles Leroy Moore.....	Malden	1907
Thomas Vinson Nash.....	Weymouth	1910
William Nelson.....	Boston	1907
Edward Waterman Raymond.....	Boston	
Fred Louis Roberts.....	West Somerville	1909
Elmer Gould Royce.....	Northboro	1909
Charles Marcus Smith.....	Boston	1908
Robert William Stanley.....	Boston	1908
Thomas Francis Sullivan.....	Cambridge	1910
Nelson Barnard Todd.....	Lynn	1908
Frank White Tucker.....	Somerville	1908
George Edward Walker.....	Wakefield	1908
Jacob Wasserman.....	Boston	1907
Otto Aloysius Wehrle.....	East Boston	1908

Class of 1909

Thomas Donald Adair.....	Roxbury	1909
Henry Nathaniel Andrews.....	Boston	1909
Williams Brooks Baker.....	Danvers	1910
Gilbert Bezanger.....	Winthrop	1909
Thomas Herbert Bilodeau.....	Boston	1909
Henry Victor Charboneau.....	Lowell	1909
Charles Alfred Colton.....	Winthrop	1909
Henry Wesley Davies.....	Ballardvale	1908
Samuel Davis.....	Boston	1907
Ernest Doane Easton.....	Providence, R. I.	
Chester Everett.....	Boston	1909
David William Everett.....	Boston	1909
Andrew Franklin Faden.....	Jamaica Plain	

Name	Residence	Passed Bar Examinations
Thomas Jefferson Fitz.....	Melrose Highlands	1911
William Philip French.....	West Somerville	1908
Don Gleason Hill, Jr.....	Dedham	1909
Perry Brooks Howard.....	Watertown	1910
William Francis Howard.....	Dorchester	1909
Lawrence Woodbury Huse.....	Boston	1909
Daniel Francis Lynch.....	Roxbury	
James Francis McDermott.....	Boston	1909
Frank Eliot Marble.....	Lynn	1910
George Nelson.....	Boston	1910
William Ignatius Norton.....	Boston	1909
Charles Joseph O'Connell.....	Worcester	1909
James Lewis Roche.....	Lincoln	1909
George Edward Roewer, Jr.....	Boston	1909
William De Forest Ross.....	Wollaston	1909
William Thomas Salter.....	Boston	1909
Arthur Lawrence Stevenson.....	Newton	1908
William Booth Stevenson.....	Newton	1909
James Aloysius Sullivan.....	Boston	1909
Dana Scott Sylvester.....	Brookline	1908
James Irwin Tucker.....	West Somerville	
Alexander Thurrott Walker.....	Forest Hills	1909
Robert Winthrop Young.....	Boston	1909

Class of 1910

Walter Pennington Abell.....	Roslindale	1910
William Antcliffe Bellamy.....	Taunton	1910
John Bianchi.....	Newtonville	1910
Lyman Warren Brooks.....	Watertown	1911
William Herbert Burke.....	Worcester	1911
Ralph Norman Butterworth.....	Revere	1909
James William Byron.....	Concord	1910
John Bernard Canfield.....	Newton	1910
George Henry Carriek.....	Cambridge	1910
James Thomas Carter.....	Dorchester	1910
Fred William Cousins.....	Medford	1910
Adolph Isaac Dinner.....	Roxbury	1910
Shirley Howe Elbridge.....	Waltham	
William Caleb Frye.....	Winthrop	1910
James Clarence Funnell.....	Boston	1909
Jos. Julian Orphee Gingras.....	Lynn	1910
Walter Howard Gleason.....	Watertown	1910
Ralph Clifton Glidden.....	Reading	1910
*Thomas Max Gurin.....	Boston	1911
Frank Howard Hallett.....	Dorchester	1910
John Emmett Hanlon.....	Dorchester	1910
Thomas Aloysius Henry.....	Salem	1910
William Martin Henry.....	Salem	1910
Jeremiah George Herlihy.....	Roxbury	1910
Ralph Eugene Hiland.....	Everett	1910
George Preston Hitchcock.....	Brookline	1910
Jesse Allen Holton.....	Boston	1910
William Everett Horne.....	Quincy	1910
Guy Atwood Jackson.....	Dorchester	1910
George Marshall Jewell.....	Everett	1910
Louis Agassiz Jones.....	West Somerville	1910

Name	Residence	Passed Bar Examinations
Wilbur Aaron Jordan, Jr.....	Dorchester	1910
Maurice Kronick.....	Boston	1910
Henry Lawrin.....	Boston	1910
Harold Wesley Loker.....	Swampscott	1910
Herman Albin MacDonald.....	Beverly Farms	1910
James Preston Mackin.....	Boston	1912
Patrick Joseph Madigan.....	Boston	1910
Frederick Huntley Magison.....	Haverhill	1910
Augustus Vincent Murphy.....	Dorchester Centre	1910
Alexander William Murray.....	Cambridge	1910
Albert Leslie Partridge.....	Waltham	1910
William John Pike.....	Chelsea	1910
Peter Ratzoff.....	Roxbury	1910
Arthur Bleckford Rigney.....	Haverhill	1910
Allan Robinson.....	Revere	1910
Elmer Ernest Spear.....	Everett	1911
James William Sweeney.....	Quincy	1910
James William Spicer.....	Melrose Highlands	
Israel Mark Ullian.....	Roxbury	1910
Robert Comey Van Amringe.....	Roxbury	1910
John Joseph Ward.....	Medford	1910
Maynard Addison Wood.....	West Somerville	1910
Frank Hubert Wright.....	Boston	

Class of 1911

David James Aaron.....	Allston	1911
Philip Julius Aaronofsky.....	Roxbury	1911
John Alfred Anderson.....	Boston	1911
Charles William Babson.....	Dorchester	1911
Edward Holbrook Baker, Jr.....	Cambridge	1911
George Grant Brayley.....	West Somerville	1910
Leslie Nicholas Brock.....	Cambridge	1911
Winslow Page Burhoe.....	Somerville	1910
Richard Walter Burnes.....	Everett	1911
Moses Caplan.....	Boston	1911
Hugh Augustus Carney.....	Roxbury	1911
Benjamin Harrison Chertok.....	Dorchester	1911
Edgar Weston Cobb.....	Medford	1911
Joshua Aaron Crawford.....	Boston	1911
Oris John Auguste Dionne.....	Walpole	1911
Harvey Alexander English.....	Jamaica Plain	1911
Percival Fitzgerald.....	Mattapan	1912
David Flower.....	Roxbury	1911
William Forbes.....	Boston	1911
William Joseph Geegan.....	West Newton	1910
William Francis Hill.....	Dedham	1911
Henry Hopkinson.....	Jamaica Plain	1911
Frederick Austin Kennett.....	Dorchester	1911
Alfred Carl Malm.....	Brighton	1911
Frederick William McGowan.....	Medford	1911
John Henry Mattson.....	Lynn	1910
Andrew Potter Nichols.....	Fall River	
Orton Abner Peck.....	Boston	1911
William Henry Peterson.....	Cambridge	1911
Chester William Pike.....	Dorchester	1912
John Isaac Preston.....	Wakefield	1911

Name	Residence	Passed Bar Examinations
George Prussian.....	Roxbury	1911
Frederick Robinovitz.....	Boston	1911
John William Roome.....	Dorchester	
Louis Joseph Rouleau.....	Jamaica Plain	1911
William Theis Smith.....	Somerville	1911
Edmund Michael Stanton.....	Roxbury	1912
Theodore Einar Stevenson.....	Roxbury	1910
George Burchstead Tinkham.....	Roslindale	
Lewis Augustine Twitchell.....	Dorchester	
Calvin John Upham.....	Dorchester	1911
Samuel Parsons Vatcher.....	Lynn	1911
Howell Brackett Voight.....	Dorchester	
James Andrew Waters.....	Newton Centre	1910
Alfred Mayer Weismann.....	Jamaica Plain	1911
Augustine Walter Welch.....	Watertown	1911
Alfred Little West.....	Somerville	1911
Charles Chester Willard.....	Cambridge	1912
Ralph Howard Willard.....	Boston	1911
James Graham Wolff.....	Allston	1911

Class of 1912

Asa Samuel Allen.....	Belmont	1912
Harry Lee Bagley.....	Brookline	1912
James Thomas Baldwin.....	East Braintree	1912
Charles Edward Baltzo.....	Melrose	
Henry Albert Bascom.....	Malden	1912
William Henry Bazley.....	Everett	1912
Samuel Tompkins Bennett.....	Malden	1912
Robert Edward Bigney.....	South Boston	1912
John Joseph Burke.....	Boston	1912
Warren Frederick Card.....	Lynn	1912
Cyrus Stewart Ching.....	Boston	1912
George Cohen.....	Somerville	1912
John Joseph Conway.....	West Roxbury	1912
Lester Wilkins Cooch.....	Everett	1912
Ralph Bertrand Currier.....	Chelsea	1912
Wilfred James Doyle.....	Mattapan	1912
Leo Joseph Dunn.....	Roslindale	1911
John William Eldracher.....	Boston	1912
George Robert Ellis.....	Foxboro	1912
Norman Farquhar.....	Boston	1912
Philip Joseph Feinberg.....	Boston	1912
Frank Hervey Fittz.....	Waltham	1912
Frank Freundlich.....	Boston	1912
John Francis Gannon.....	Worcester	1912
Abraham Goldberg.....	Boston	1911
Harry Klauser Good.....	Roxbury	
Charles Emmett Gorman.....	Roslindale	1912
Reuben Bertram Gryzmish.....	Boston	1912
Charles Edward Halliday, Jr.....	Lynn	1912
John Joseph Haney.....	Medford	
Joseph Charles Hannon.....	West Newton	1912
Edward Lavant Harris.....	Arlington	1912
Walter Joseph Hendrick.....	Boston	1912
Frederick Hoitt.....	Boston	1912
Gustav Ferdinand Hollstein.....	West Roxbury	

Name	Residence	Passed Far Examinations
William Frank Joseph Howard.....	South Boston	1912
Myer Harry Isaacson.....	Dorchester	
Walter Scott Jardine.....	Arlington	
Frank Roland Keith.....	Dorchester	1912
Luke Joseph Kelley.....	Jamaica Plain	
Samuel Thomas Lakson.....	East Boston	1912
Timothy Francis Leonard.....	Charlestown	1913
Finch Elbert Lewis.....	West Somerville	1912
Henry Nathaniel Longley.....	East Braintree	1912
John Michael Lyons.....	East Weymouth	1912
Thomas Bernard McCaffrey.....	Brookline	1912
William John MacInnis.....	Gloucester	1912
Abner Sterling McLaughlin.....	Lynn	1912
Arthur Hawes McLearn.....	Dorchester	1912
John Cornelius Mahoney.....	Worcester	1913
William Raymond Mahoney.....	Cambridge	
George Albert Mansfield, Jr.....	Waltham	1912
Leslie Rogers Moore.....	Newton	1912
Alexander Nagle.....	Boston	1912
Reginald Ebenezer Peters.....	Cambridge	1911
Benjamin Rabalsky.....	Boston	1911
Arthur Elmer Reimer.....	South Boston	1912
Ralph Henderson Robb.....	Boston	1912
James Percy Roberts.....	Dedham	1911
Michael Seretto.....	Boston	
Leon Leland Silbert.....	Roxbury	1911
Nicholas John Skerrett.....	Worcester	
Walter McCabe Smith.....	Cambridge	1912
George Edwin Stebbins.....	Boston	1911
Richard Rogers Sullivan.....	Charlestown	1912
James Francis Terry.....	Boston	1917
Ralph Carl Thulin.....	Brighton	1912
Frederick J. Turner.....	California	
Nathan Ullian.....	Boston	1912
Joseph Vecchioni.....	Boston	1912
Charles Gordon Whitcomb.....	Allston	
Harold Willis.....	Brookline	1912
Edward Joseph Ziegler.....	East Dedham	1912

Class of 1913

Frank Auchter.....	Boston	1913
Daniel Asher.....	Worcester	1912
Harold Clifton Berry.....	Dorchester	
Walter Francis Blaser.....	Somerville	1913
Edgar Alden Bowers.....	South Framingham	
Aaron Philip Brest.....	East Boston	1913
Philip Augustine Carroll.....	Dorchester	1913
William Joseph Carroll.....	Cambridge	1913
Fred Martin Colby.....	Everett	1913
Robert Shaw Corrigan.....	Natick	1913
Lyman Croan.....	Roxbury	1913
John Dodd Daly.....	Salem	1913
John Patrick Dimond.....	South Boston	
Roy Leslie Duren.....	Boston	
Fred Winslow Fisher.....	Medford	1913
James Francis Flaherty.....	Brighton	1913

Name	Residence	Passed Bar Examinations
James C. Flannery.....	Boston	1913
John Daniel Fogarty.....	Roxbury	1913
John Charles Gilbert.....	West Somerville	1913
Morris Hille Freidson.....	Roxbury	1913
Alfred Raphael Ghiloni.....	Marlboro	1913
Martin John Heiligmann, Jr.....	West Roxbury	1913
*Ralph Waldo Hobbs.....	Quincy	1913
George Frank Howland.....	South Framingham	1913
Lewis Hyman.....	South Boston	1913
Paul Norris Jewett.....	Dorchester	1913
William Francis Johnston.....	Somerville	1912
Max Jolles.....	Roxbury	1912
George William Kenney.....	Wakefield	1913
Albert Edwin Lamb.....	Melrose	1913
A. Robert Martin.....	Forest Hills	1913
James Gervin Moran.....	Mansfield	1916
Michael Joseph Mulkern.....	South Boston	1913
Norman David Nexon.....	Boston	1913
John Saunders Climo Nicholls.....	East Boston	1913
Joseph Sanderson Pickford.....	Dorchester	1913
William Amber Reed, Jr.....	Chelsea	1913
James Frederic Rollins.....	Dorchester	1913
Josiah Hirsh Rosenberg.....	Boston	1913
Israel Ruby.....	Chelsea	1913
Benjamin Joseph Shoolman.....	Malden	1913
William David Stein.....	Malden	1913
John Gerald Sullivan.....	Medford	1913
Daniel Gordon Thompson, Jr.....	Hyde Park	1913
James Frederick Tobin.....	Roxbury	1913
Carlton Walen Wonson.....	Boston	1913
Jacob Benjamin Zuckernik.....	Boston	1913

Class of 1914

Robert Ernest Archibald.....	Dorchester	1913
Charles Elmer Bartlett.....	Boston	1913
Samuel Bergson.....	Dorchester	1914
John Thomas Comerford.....	Brookline	1913
Thomas Francis Connolly.....	Roslindale	1914
Samuel Henry Davis.....	Reading	1913
Clement Charles Desaulniers.....	Salem	1915
William Benjamin Doggett, Jr.....	Dorchester	
James Michael Downey.....	Dorchester	1913
Robert Saunders Dowst.....	West Virginia	1914
Nathan Efron.....	Boston	1913
Carl Rudolph Felton.....	Boston	1916
Frank Hugh Flagg.....	Dorchester	1914
John Joseph Flaherty.....	Lowell	1913
Leslie Nathaniel Gebhard.....	Everett	1916
Isaac Harold Greenburg.....	Everett	1913
John Edward Hand.....	Cambridge	1913
Ralph Rodney Harris.....	Leominster	1915
Reuben Harris.....	Dorchester	1913
William Martin Heiligmann.....	Roxbury	
Thomas Francis Edward Higgins.....	Newton	1914
Poy Howard Hoffman.....	North Reading	1914
Frank Radford Hope.....	Melrose	1915

Name	Residence	Passed Bar Examinations
John Jeremiah Humphrey	Dorchester	1915
Harry Eugene Jenkins.....	Boston	1916
Harold Pratt Litchfield.....	Cohasset	1913
William MacConnell.....	Dorchester	1916
Richard Henry MacDonald.....	Randolph	
Harry Benjamin Mendelsohn.....	Dorchester	1913
Michael Joseph Miles.....	East Boston	1916
Robert Benjamin Mount.....	Dorchester	1913
John Sidney Patton, Jr.....	Boston	1913
Peter Williams Pezzetti.....	Boston	1913
Arthur Carter Pickering.....	Salem	1914
Maurice James Power.....	Charlestown	1915
Carl Fisher Prescott.....	Quincy	
Frank Xavier Reilly.....	Westboro	1915
John William Robbins.....	Somerville	1913
Harry L. Saipe.....	Chelsea	
Philip Samuels.....	Malden	1913
Walter Simonds.....	Milton	1914
George William Skuse.....	Boston	
Charles Harrison Sloan.....	Waverly	1913
Max Smith	Boston	1914
Milton Anthony Stone.....	Boston	1913
William Allen Stone.....	Dorchester	1914
Lucius Byron Weymouth.....	Hyde Park	1914

Class of 1915

Walter John Anderson.....	Wakefield	1915
William Ambrose Arthur.....	Revere	1917
Pierce Brigham Bennett.....	West Medford	1916
George Frederick Blood, Jr.....	Hyde Park	
James Alfred Brickett.....	North Cohasset	1915
Benjamin Irving Brudno.....	Dorchester	1915
Walter Alfred Burnham.....	Somerville	1915
Daniel Francis Collins.....	South Boston	1916
William Augustine Connelly.....	East Boston	
John Alfred Crowley.....	Lowell	1915
James Edmund Curry.....	Cambridge	1915
Leopold Harris Dinner.....	Roxbury	1913
George Joseph Ganer.....	Roslindale	1915
Borouch Osher Gofung.....	Boston	1915
Harry Goldkrand.....	Jamaica Plain	1914
Howard Allison Gray.....	Somerville	1915
James Gerard Harnedy.....	Brookline	1916
Joseph Hubbard Hefflon.....	Winchester	1916
Ralph Henry Hermann.....	Boston	
Allan Clare Inman.....	West Somerville	1915
James Edward Karins.....	Boston	1916
Walter Albert Lambert.....	Allston	1915
John Joseph Lillis, Jr.....	Everett	1915
Brent Bradley Lowe.....	Roxbury	1915
Leo Francis McAleer.....	Newton	
Thomas Florence McCarthy.....	Waltham	1916
Benjamin Harrison McKinley.....	Lowell	1916
Gustave Harold Madsen.....	Woburn	1915
Frederick Roberts Makepeace.....	Malden	1915
Rupert Lamert Mapplebeck.....	Roxbury	1915

Name	Residence	Passed Bar Examinations
Clifford Orland Mason.....	Winchester	1916
John Jones Murray.....	Arlington	
*Frank Joseph Neylan.....	Somerville	1915
A. Lincoln Niditch.....	Boston	1915
Robert Clement Orpin.....	Medford	1913
George Stephen Parker.....	Dorchester	1916
Seneca Arthur Paul.....	Woburn	Maine Bar 1916
Samuel Pitchel.....	Boston	1917
William Henry Powers, Jr.....	East Boston	1917
Lynn Melvin Ranger.....	Lynn	1915
Joseph Edward Riley.....	Hopkinton	1914
Leon Rubenstein.....	Dorchester	1915
Simon Schwartz.....	East Boston	1916
Mark Shain.....	Roxbury	1915
Bernard Shalit.....	Dorchester	1916
Isaac Edward Simons.....	Roxbury	1916
Howard Yeaton Stearns.....	Arlington	
Israel Stolper.....	Chelsea	1917
Dean Judson Tolman.....	Boston	1917
*Frank Harvey Towne.....	Salem	
Alonzo Joseph Ward.....	Cambridge	
Albert Franklin Welsh.....	Ipswich	1913
George Franklin Wenrich.....	Malden	1917
Harry Edward Wheeler.....	Boston	1916
Albert Freeman Wigley.....	Dorchester	
George Wilinsky.....	Boston	1915

Class of 1916

Jacob Lewis Aaron.....	Allston	1916
Albion Americus Anderson.....	Melrose Highlands	1917
Frederick Russell Bartlett, Jr.....	Roslindale	
Enos Ralph Bishop.....	Dover, N. H.	
John Stanhope Ray Bourne.....	Cambridge	1916
Herman Copeland Bowser.....	Arlington	1916
Irving Nelson Burbank.....	Belmont	
Frederick Walter Cobb.....	Newton Upper Falls	
Benjamin Cohen.....	Roxbury	
David Pulsiver Colville.....	Roxbury	1917
Daniel Florence Crowley.....	Salem	1916
Richard Brenton Currie.....	Boston	1916
Lewis Freeman.....	Cambridge	1917
Thomas Roland Freeman.....	Lynn	1916
William Michael Gaddis.....	Dorchester	
H. Hart Gilfix.....	Newton	1916
Thomas Daniel Gleason.....	Roxbury	1916
Samuel Gottlieb.....	Everett	1916
David Greer.....	Newton	1916
Henry Jordan Greer.....	Pawtucket, R. I.	1917
Evan Warren Griffiths.....	Cambridge	
Charles Chamberlain Grimmons.....	Somerville	
John Justus Hayes.....	Allston	1915
Alfred Harris Heininger.....	West Somerville	1917
Moses Hochberg.....	Dorchester	1918
Arthur Viall Jones.....	Somerville	1916
Herman Axel Kinder.....	Cambridge	
William Tucker Martin, Jr.....	Marblehead	1916

Name	Residence	Passed Bar Examinations
John Henry Moran.....	Brookline	1916
William John Edward Mulcahy.....	Cambridge	1916
Alfred Francis Mulvihill.....	West Newton	1917
John Joseph McCarthy.....	Salem	1916
Robert Andrew MacLellan.....	Dorchester	1918
Chester Weston McNeill.....	Somerville	1917
James Edward McVann.....	Peabody	1916
Edward Abraham Nathanson.....	Roxbury	1916
John Joseph Norton.....	Jamaica Plain	1916
Benjamin Novack.....	Dorchester	1916
Jeremiah Francis O'Neill.....	Charlestown	
James Aloysius Pagum.....	Malden	1916
John Austin Reilly.....	Dorchester	
Thomas Michael Reynolds.....	Roslindale	1915
Bartholomew Joseph Ronan.....	Peabody	1917
William Charles Rosen.....	Roxbury	1916
John Bryant Sawyer.....	Wakefield	1916
David Frederick Sibulkin.....	Boston	
Harry Cleverly Slocomb.....	Winthrop	1917
Maurice Thorner.....	Cambridge	1917
John Joseph Walsh, Jr.....	Boston	1916
Walter Thomas Walsh.....	South Boston	1917
Percy Leroy Wetmore.....	West Somerville	1917
William Colby Wildey.....	West Somerville	1917
Charles Thomas Willock.....	South Boston	1917

Class of 1917

Ephraim Tyler Albert.....	Dorchester	
Maurice Ernest Andelman.....	Cambridge	
Walter Newton Benson.....	Malden	1916
David Harold Bloom.....	Dorchester	
Herbert George Brower.....	Waltham	1917
Bertram Abel Brown.....	Quincy	1918
David Julius Cohen.....	Roxbury	1918
Hans Christensen.....	Newton	
John E. Conway.....	Jamaica Plain	1917
John Francis Daly.....	Somerville	1917
Roy Chandler Davis.....	Dorchester	1917
William John Donahoe.....	Brighton	1917
Thomas Edward Doyle.....	Roxbury	1918
William John Doyle.....	Roslindale	
Frank Joseph Duffy.....	Quincy	1918
Charles Fairhurst.....	West Somerville	1917
Charles Edward Fay.....	Jamaica Plain	1917
Jeremiah Gilman Fennessey.....	Boston	
Harold Maxwell Fine.....	Roxbury	1918
James Roberts FitzGerald.....	Belmont	1917
Roland Willard Fletcher.....	Mattapan	1918
Lloyd Albinus Frost.....	Cambridge	1917
John Edward Gilmore.....	Brockton	1917
E. Max Gladstone.....	Roxbury	1917
Vincent Regulus Grainger.....	Cambridge	1918
George McClellan Harrigan.....	Lowell	
Patrick Augustine Hayes.....	Lowell	1917
Joseph William Hickey.....	Shrewsbury	1917
James Irving Holsberg.....	Roxbury	

Name	Residence	Passed Bar Examinations
William Dudley Hopkins.....	Boston	
Henry Adolphus Horn.....	Boston	1917
Abraham Kamberg.....	Boston	1916
Joseph Henry McCann.....	Boston	
William Henry McDonnell.....	South Boston	1916
Richard Joseph Martin.....	Arlington Heights	1917
Samuel Maylor, Jr.....	East Boston	1917
Frederick Arnold Moeller, Jr.....	Cambridge	1917
Farquharson James Muir.....	Winchester	1917
Ambrose Norwood Nickerson.....	Hyde Park	1917
Albert Lawrence Olson.....	Waltham	
Raynor Lesley Osborne.....	Everett	
Edward Willard Phippen.....	South Boston	
Abram Resnick.....	Boston	1918
Allen Tucker Rogers.....	Everett	1917
Samuel Rosenberg.....	Boston	
Philip Rosenthal.....	Dorchester	1917
Maxwell Sawyer.....	Boston	1919
Joseph Harry Seaman.....	Roxbury	
Benjamin Simons.....	Boston	
Timothy Daniel Sullivan.....	Cambridge	1917
Warren Russell Symonds.....	Salem	
Harold Eugene Jeanerette Tarr.....	Somerville	
Clarence Milton Whipple.....	Boston	1917
John Philip White.....	Roxbury	1917
Delphin Francis Young.....	Brookline	
William Zisman.....	Roxbury	1918

Class of 1918

Irving Bertman.....	Dorchester	1918
Sidney Arthur Bowdidge.....	Somerville	
Dennis Benedict Burns.....	Boston	
Daniel David Carmell.....	South Boston	
Edward Joseph Casey.....	Dorchester	1918
Edwin Atwood Chalmers.....	Allston	1919
Frederick James Cloutman.....	Salem	1918
Charles Henry Coleman.....	Roxbury	1918
Robert Croan.....	Roxbury	1918
Maurice Walter Dennison.....	Allston	
Louis Benjamin Goldman.....	Roxbury	1919
John Joseph Gorman.....	Woburn	1918
Ernest Alfred Hale.....	Brookline	1918
Francis Bowman Hawley.....	Waltham	
John Gerard Herlihy.....	Boston	1919
Ernest Winslow Jones.....	West Somerville	1918
William Francis Kane.....	Dorchester	1918
James Arthur Liacos.....	Peabody	1918
John Patrick McBride.....	Waverly	1918
Joseph Wallace Mahony.....	Revere	
Harry Mandelstam.....	Roxbury	1918
George Thomas Marvin.....	West Somerville	1917
Francis Louis Norman.....	South Boston	1919
John Francis O'Connell.....	Dorchester	
William Joseph O'Neill.....	Boston	1918
Albert Spurzheim Olsson.....	Brighton	
Bernard Radin.....	Beachmont	

Name	Residence	Passed Bar Examinations
Joseph Riley.....	Boston	1918
James Francis Rockett.....	Boston	
Ned Maurice Russell.....	Medford	1918
Jacob Abraham Shure.....	Dorchester	1918
Morris Jeremiah Smith.....	Roxbury	1919
Benjamin David Solomon.....	Allston	1918
Charles Augustus Southworth.....	Swampscott	1918
Edgar Saxon Stanley.....	Needham	
Chester Chandler Steadman.....	Cambridge	1918
*Richard Lond Stubbs.....	Wollaston	1918
Patrick Hugh Tenney.....	Wakefield	
Albert Theodore Wall.....	Worcester	1918
Herman Frederick Wohlschlagel.....	Roxbury	
Leon Irving Wood.....	Needham	

*Deceased

GENERAL DEPARTMENTS

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

Department of Recreation and Health

This department offers the *best recreation* that *re-creates*. Privileges as follows: Three Gymnasiums, Swimming Tank of Filtered Salt Water, Baths of all kinds, Classes of Music, Six Bowling Alleys, Tennis—Indoor and Out, Handball, Squash, Indoor Golf, Athletics—Indoor and Out, Basketball and Games, Boxing, Wrestling and Fencing. Best of instruction. Medical direction. Come in any time.

Department of Religious Work

In order that young men may secure a well-balanced development and attain the true foundation for successful living, the Association advises each member so to plan his schedule that he may enter into one or more of the following activities:

Character Building Classes	Training for Christian Service
Young Men's Sunday Forum	Lectures and "Talks"
Gospel Team	Workers' Library
Personal Interviews	Twenty-four-Hour-a-Day Club

Department of Social Work

The attention of members is called to the many opportunities in the Association for social service, and the following social features:

A Newly Equipped Game Room	El Club Sarmiento (Pan-American Club)
The Association Congress	
Popular Social Evenings	The Land and Water Club
Concerts and Entertainments	

Department of Counsel and Placement

Advice given to young men concerning their vocational future, and efforts made to place them in positions best adapted to their varied abilities. It also acts as a clearing-house for young men seeking work, and employers desiring to engage reliable help. Its service is not limited to members, but the latter are given liberal discounts and effort is made to notify them when good positions are open.

Boys' Division

The Boys' Division is made up of boys from Greater Boston, whose needs are ministered to by a force of young men who have made a careful study of "boyology." The division comprises boys from twelve to eighteen years of age, whose needs are studied and whose problems we try to solve. Activities are conducted along social, physical, educational, and spiritual lines. The annual membership fee is \$2.00; gymnasium and natatorium privileges are open to the boys at special rates.

NORTHEASTERN COLLEGE

OF THE

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

CATALOGUE

OF THE

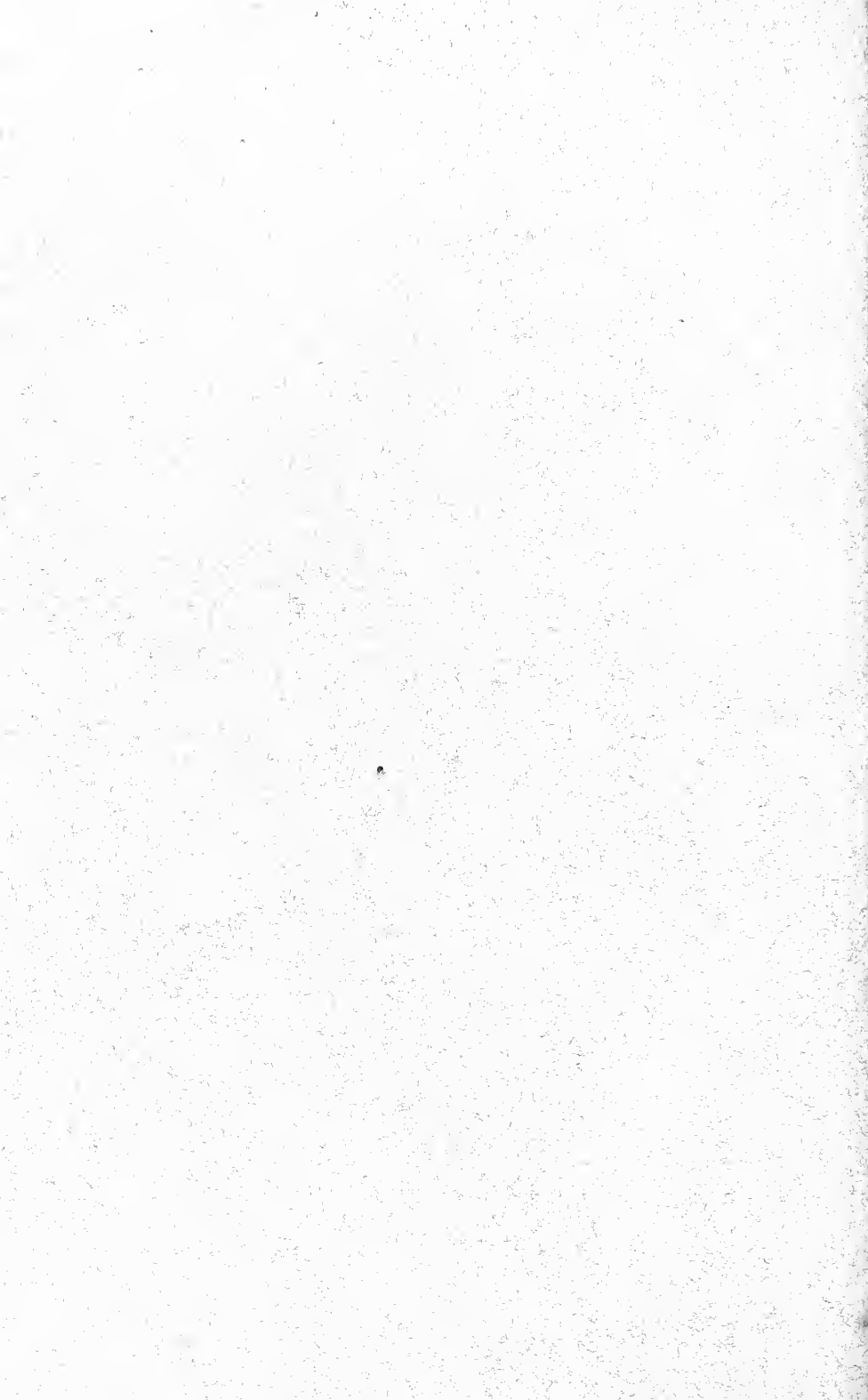
**SCHOOL OF COMMERCE
AND FINANCE**

1919 - 1920



**An Evening School of College Grade Offering
Business Training to Employed Men**

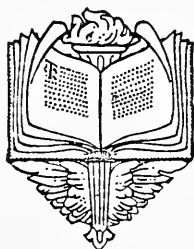
**316 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS**



NORTHEASTERN COLLEGE

Catalogue of the
SCHOOL OF
COMMERCE
& FINANCE

1919 - 1920



Published by the Trustees of
NORTHEASTERN COLLEGE
OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
316 HUNTINGTON AVENUE, BOSTON, MASS.

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Calendar

1919	June 6	Competitive examinations for high school seniors (7.30 P.M. See page 14)
	June 6	Entrance Examination for Advanced Standing (7.30 P.M. See page 14)
	Sept. 9, 12 and	Entrance Examinations for Advanced Standing (7.30 P.M. See page 14)
	Sept. 8 to 22 (inclusive)	Registration of Students
	Sept. 8 to 12 (inclusive)	Examinations for Removal of Conditions
	Sept. 17	Opening of First Semester
	Oct. 12	Columbus Day
	Nov. 27	Thanksgiving Day
	Dec. 19	Christmas Vacation Begins (9.15 P.M.)
1920	Jan. 5	Christmas Vacation Ends (7.15 P.M.)
	Jan. 23	Close of First Semester
	Jan. 26	Beginning of Second Semester
	Feb. 22	Washington's Birthday
	Apr. 19	Patriots' Day
	May 17	Final examinations commence
	May 30	Memorial Day
	June 16	Commencement Exercises

Opening Exercises

The opening exercises of the school will be held in Bates Hall, Boston Y. M. C. A., on Tuesday evening, September 16th, at 7.30 o'clock, at which time there will be addresses by several prominent business men. This meeting will be open to the general public, and those who contemplate enrolling in the school, or whose plans are not yet determined, are cordially invited to attend. Ladies invited. Admission tickets obtainable at school office.

Office Hours

The office of the College at 316 Huntington Avenue, will be open each week day from 9 a.m. to 5 p.m.; also 6 to 9 p.m., after September 7.

Telephone connection: Back Bay 4400 (ask for the School of Commerce and Finance).

Students intending to enroll may avoid standing in line on opening night by obtaining enrollment blanks in advance through the mail.

Northeastern College

The Trustees

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Corporation

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FRANKLIN W. GANSE, Manager of Home Office Agency, The Columbian National Life Insurance Company
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WILLIAM S. KEMP, Treasurer of the Holtzer-Cabot Electric Company
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HENRY G. LORD, of the firm of Lord & Nagle
J. EDWARD MASTERS, New England Manager of the firm of Price, Waterhouse & Company, Certified Public Accountants
GEORGE W. MEHAFFEY, General Secretary of the Boston Y. M. C. A.
WALTER B. MOSSMAN, of the firm of R. H. Stearns & Company
SILAS PEIRCE, President of Silas Peirce Company
GEORGE S. SMITH, President of the New England Power Company and Ex-President of the Boston Chamber of Commerce
FRANK PALMER SPEARE, President of Northeastern College
F. R. CARNEGIE STEELE, of the firm of Patterson, Teele & Dennis, Certified Public Accountants
STANLEY G. WELLINGTON, of the firm of Wellington, Sears & Co.

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MORGAN L. COOLEY, C.P.A. FRANKLIN W. GANSE
J. EDWARD MASTERS, C.P.A. FRANK PALMER SPEARE, M.H.
ARTHUR S. JOHNSON

Northeastern College

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PHILIP F. CLAPP, B.C.S., C.P.A., *Associate Dean*

ALFRED J. THOMPSON, *Assistant to the Dean*

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Department of Accountancy

PHILIP F. CLAPP, B.C.S., C.P.A.
(Robert Douglas and Company, C.P.A.)
Professor of Accounting, System Building and Cost Accounting

ERNEST H. GRISWOLD, B.S., C.P.A.
(Senior partner, Griswold and Conant, C.P.A.)
Professor of Accounting and Auditing

GEORGE L. HOFFACKER, B.C.S.
Instructor in Accounting

RAYMOND D. WILLARD, B.C.S., C.P.A.
(Robert Douglas and Company, C.P.A.)
Instructor in System Building

ALFRED J. THOMPSON
Instructor in Accounting

ARTHUR F. O'MALLEY, A.M.
Instructor in Accounting

ROBERT BRUCE, M.C.S.
Instructor in Accounting

WARREN W. PETRIE, B.C.S.
Instructor in Accounting

EUGENE R. VINAL, A.M.
Instructor in Business Mathematics

F. R. CARNEGIE STEELE, F.C.A., C.P.A.
(Member of the firm of Patterson, Teele & Dennis)
Lecturer in Advanced Accounting

JAMES WILLING, C.A.
(Member of the firm of Patterson, Teele & Dennis)
Lecturer in Advanced Auditing

WILLIAM S. KEMP
(Treasurer, The Holtzer Cabot Electric Co.)
Lecturer in Cost Accounting

MORGAN L. COOLEY, C.P.A.
(Of the firm of Cooley & Marvin)
Lecturer in Advanced Accounting

FACULTY

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(Of the firm of Cooley & Marvin)

Lecturer in System Building and Cost Accounting

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(Of the firm of Bright, Sears & Company)

Lecturer in Accounting for Brokers' Offices

HERBERT F. FRENCH, C.P.A.

(Of the firm of Herbert F. French & Company)

Lecturer in Advanced Accounting

FERDINAND M. HOLMES

(Trust Officer for the Old Colony Trust Company)

Lecturer in Accounting for Executors and Trustees

J. EDWARD MASTERS, C.P.A.

(New England Manager for Price, Waterhouse & Company)

Lecturer in Advanced Accounting

CHARLES P. POTTER

(Ellis Adding Typewriter Co.)

Lecturer in System Building

Department of Economics

ARTHUR S. DEWING, PH.D.

Head of Department and Professor of Economics

CHARLES W. MIXTER, PH.D.

Lecturer in Scientific Management and Labor Problems

Department of Business English

MAURICE J. LACEY, A.M.

Head of Department and Professor of Business English

Department of Business Law

ASA S. ALLEN, LL.M.

Head of Department and Professor of Business Law

Department of Business Administration

DANA S. SYLVESTER, LL.B., B.C.S.

(Dean of the School)

Head of Department and Professor of Industrial Organization

JOHN K. ALLEN

(Of Wood, Putnam & Wood Company)

Instructor in Publicity

A. P. BROWN

(Of the firm of F. S. Moseley & Company)

Lecturer on Commercial Paper

SCHOOL OF COMMERCE AND FINANCE

A. B. RICH

(Dennison Manufacturing Co.)

Lecturer in Industrial Organization

MATTHEW POROSKY

(Chairman, Factory Management Committee, The Holtzer-Cabot Electric Co.)

Lecturer in Industrial Organization

E. M. FISHER, A.B.

(Supervisor of Selling, William Filene's Sons Company)

Lecturer in Sales Management

CHESTER F. CROWELL

(Library Bureau)

Lecturer in Office Management

FRANKLIN W. GANSE

(Manager of Home Office Agency, The Columbian National Life Insurance Co.)

Lecturer in Sales Management

EDWARD L. HARRIS

(New England Credit Manager, Swift & Company)

Lecturer in Commercial Credits

HARRY N. HAVEN

(Associate Manager, Mass. Mutual Life Insurance Co.)

GARDINER E. THORPE

(Superintendent of the Bradstreet Company)

Lecturer in Commercial Credits

The Value of College Training

The Bureau of Education at Washington has issued a booklet entitled, "The Money Value of Education." This booklet summarizes the actual cash value to the individual of different types of education.

The following extract from the booklet is the result of an analysis of the distinguished men catalogued in "Who's Who in America."

"Without an education a man's chances of success are one in one hundred and fifty thousand. With elementary education the chances are increased to four. With high-school education, to eighty-seven, and with college education to eight hundred."

General Statement

Northeastern College

Northeastern College of the Boston Young Men's Christian Association is the outcome of twenty years of intensive work specializing in education for the increased efficiency of employed men. The effort has been to offer during the evening hours, at reasonable rates, courses of study on the highest plane, and leading to marked efficiency. During this time the school system has grown from four hundred and nineteen students, twelve subjects, and fifteen teachers, to a student body of four thousand four hundred students, two hundred and fifteen instructors, lecturers, and assistants, and the grade of work has advanced from that of disconnected elementary courses to the dignity of a New England College, highly organized, incorporated, and conducting several distinct schools under its charter.

Northeastern College consists of the School of Law, established in 1898; School of Engineering, established in 1906; the School of Commerce and Finance, established in 1907; the Co-operative School of Engineering, established in 1909; and the School of Liberal Arts, founded in 1916. The plant and equipment afford every facility for work of high grade. The instructors are men of liberal education and of actual experience in the line to which they are assigned. The students are mature men of exceptional ambition and discrimination, who are serious in their purpose to secure the best possible training and to develop their capacities to a high degree.

The School of Commerce and Finance

Commercial courses have been offered by the Association for over thirty years, but in 1907 it was decided to expand and improve such courses, and preparations were made for the establishment of the School of Commerce and Finance. This was carried through the succeeding year, and a definite announcement made of the plans and purposes of the school. The demand for such work was promptly manifested, and in 1911 the Trustees went before the Massachusetts legislature and secured the incorporation of the school with degree-granting powers.

GENERAL STATEMENT

From its start in September, 1911, the School has shown a rapid growth. During the first year 153 students enrolled. In the third year, this number had increased to 548; in the fourth year, 761; and in the year of 1916 and 1917 it reached its highest point of 816 men. The enrollment for 1918-1919 has, of course, been affected by war conditions, but the promptness with which returned soldiers make arrangements to take up their uncompleted work indicates that they realize the practical value of the work. It is an interesting fact that nearly every man who has left did so to take up military service.

While the School welcomes graduates of high schools who are desirous of obtaining business training, and gives them the same opportunities that are accorded to older men, it is significant that men of maturity, determination, and ambition are attracted to the School because of the practical nature of the subjects taught and because they realize the necessity of intensified technical training in modern business methods.

The students come from every line of business,—bookkeepers, office managers, bank clerks, accountants, commercial teachers, lawyers, salesmen, production managers, and clerks all being represented in the student body.

During the past two years a great many calls have come from government departments for men trained in various lines of accounting and business administration, and a large number of our men have been or are now engaged in government work requiring this special type of training. It is a significant fact that when the United States Government issued the first call for cost inspectors in 1917, graduates of our School were found to have the necessary preparation for this work from the training given in our regular courses. *It is also significant that more students from the School of Commerce and Finance have passed the Massachusetts examinations for certified public accountants than from all the other accounting schools in the state combined.*

Object and Methods of the School

The course in Accountancy is intended to provide the best possible preparation for the examinations for Certified Public Accountant given by the various states, and for the examinations for admission to the American Society of Public Accountants. This, however, is not the only object of the course. It provides a much broader and more complete preparation for the practice of accounting than is contemplated by the C. P. A. examinations. In other words, the course is intended to provide those who take it with a thorough training for business.

To accomplish this object, a good foundation in the principles of accounting is given during the first two years. It is a frequent criticism of accounting schools that instruction is given largely by means of lectures with comparatively little practice work. Lectures alone will not develop a finished accountant or administrator. A broad and elastic knowledge can be obtained only through lectures supplemented by a large amount of properly graded problem work.

The School of Commerce and Finance has fully met this criticism. A consideration of the courses described in the latter part of this catalog will show that much more outside work than is customary is required. To complete the course in Professional Accounting successfully, from 1,600 to 1,800 hours of work must be devoted to accounting subjects alone, of which from 1,000 to 1,200 hours are required for practice work outside of class.

The term work in connection with accounting subjects consists of sets of books to be written up, a great variety of exercises in connection with financial statements, adjusting entries, and closing entries. Accounting systems and sets of instructions for their conduct are required to be prepared, sets of books are audited and audit reports and working papers are required to be submitted. A great variety of C. P. A. questions in Theory of Accounts, Practical Accounting and Auditing are required to be answered. Problems are given dealing with the accounts of public utilities, municipalities, executors and trustees, manufacturing concerns, etc.

The value of this practice work in giving the student the ability

REGULAR COURSES

to apply the knowledge gained at the School is illustrated by the constant call for men from the School among business houses.

Business Law, Business English, Economics, Business Mathematics, Salesmanship, Buying, Industrial Organization, Publicity, and all other non-accounting subjects are taught by means of lectures and discussions, supplemented by problems, papers, and reading assigned for home work.

Regular Courses

Four Year Course

The full four-year course is intended for men who are granted admission as regular students and who have not obtained advanced standing in the School. These students are required to attend two nights a week during the first two years and three nights a week for the last two years. Lecture periods last from 7.15 to 9.15 each evening, and the student is required to perform considerable home work in the practical application of the subjects taught in the School.

The first year gives the student a thorough grounding in the principles of modern double-entry bookkeeping and also in elementary accounting. The work in elementary accounting is purposely started at the very beginning, and a considerable amount of time is spent at the outset in the simplest details of bookkeeping and accounting, in order that the student may be fully prepared to keep up with the more rapid progress of the accounting subjects in the latter half of the first year and in the succeeding three years.

Three Year Course

The three year course is open without examination to graduates of the preliminary course in bookkeeping given each spring by the school and to those high school students who succeed in passing the competitive examination given on June 6th, subject in each case to the student conforming to the regular requirements for admission.

The three year course is open to all other men, (subject to the regular admission requirements) who pass the entrance examinations. Bookkeepers, graduates of commercial departments of

ENTRANCE EXAMINATIONS

high schools, and others possessing a knowledge of bookkeeping are urged to take the three year course. The entrance examination covers the fundamental principles of bookkeeping and serves to give a common starting point for the entire class.

Those who desire to enter with advanced standing are advised to consult the Dean of the School as to their qualifications, and, if necessary, to devote some time to preparing for the examination. Assistance will be given in outlining a course of study and specimen questions from past examinations will be supplied at the office of the School, 316 Huntington Avenue.

The examination for advanced standing will take place at the Y. M. C. A. Building, 316 Huntington Avenue, at 7.30 o'clock, on the evenings of June 6, September 9, 12 and 19.

Students in this course are required to attend three evenings each week during the entire course. In the first year, they take up Advanced Accounting (202), Business English (141), Business Law (121), and the Principles of Economics (231). In the second year they take up the work described on page 30 under the heading of "Junior Class"; and in the third year the work entitled "Senior Class." In other words, the three-year students, by means of their expert knowledge of bookkeeping principles and by the extra night's instruction each week in the first year, are entitled to enter the regular Junior Class after one year's training.

Scholarships

The annual competitive examination for free scholarships in the school will be held this year at the Boston Y. M. C. A. Building, 316 Huntington Avenue, on June 6th at 7.30 P. M.

This examination is open to members of the senior class of any recognized high school. All applicants receiving a passing mark on the competitive examination will be eligible to take the regular three-year course without further examination upon meeting the usual entrance requirements. In addition the three men receiving the highest grades will be granted one year's free scholarship in the school.

Specimen copies of past examinations, together with such information as may assist in preparing for this examination will be promptly forwarded upon request of students or instructors of high schools.

REGULAR COURSES

Concerning the Regular Courses

It will be noticed by referring to the schedule on page 30 that until the Junior year of the School a standard course is required to be taken by all students. This is because the broad fundamentals of accounting and business practice are necessary, no matter whether the student intends to take up public accounting or whether his interest lies in some other phase of business activity.

The demands of modern business are such that a man must be trained to do some one thing particularly well. A man who can do some one thing better than the majority of men will always command respect, and his place in the business community is assured, while the man who goes into business with a general rather than a specific education will find it necessary to spend years in making a place for himself.

In order to obtain this specialized training, however, a man must have a broad foundation. No matter whether the selling, buying, advertising, production, or managerial positions are concerned, every man nowadays needs a general knowledge of accounting and of the manner in which business is conducted. For this reason the School requires all students to take certain subjects with the intention of giving the foundation upon which to build the specialized knowledge of the advanced courses.

In the Junior year, an option is given between advanced accounting work (301) and business administration work, as described more particularly in the folder issued July 15, 1919, on "Business Administration Courses." It is felt that at this point the student has obtained a sufficient foundation to enable him to begin specializing. If he prefers public accounting work, he will take the advanced accounting subjects. If, on the other hand, his wishes run along the broader phases of business administration he will choose among the business administration subjects. In the Senior year the student may take up cost accounting (401) and auditing, (402) if he wishes to specialize in accounting work. Otherwise he may take up certain other optional administration courses.

Those who take these optional courses in Business Administration are fitted for any administrative position such as office manager, credit man, sales manager, buyer, advertising manager,

THE MODERN ACCOUNTANT

etc. Those who take the advanced accounting courses are trained particularly for public accounting work, which, of course, embraces the necessary training for private accountants. The course is distinctly professional, having for its aim the best possible preparation for the accounting profession.

Complex business conditions have made the duties of a public accountant very varied. He is called upon to make examinations of the books and accounts of all kinds of businesses, and to report upon the results of his examination. He must be able to design and install accounting systems which will reduce the possibility of irregularities to a minimum. He is frequently called upon to investigate the affairs of business concerns for the benefit of prospective investors, creditors, and bankers. The opportunities in public accounting are numerous for properly trained men who possess ambition, ability, and honesty. The successful public accountant must be a man of the highest integrity and moral courage. His duties require not only a high degree of technical skill, but he should also be familiar with the various phases of business organization. He should possess a knowledge of corporation finance, money and banking, business administration, and business law. The course in Professional Accounting is designed to meet these requirements.

While there are many opportunities in public accounting for properly trained men, the field of private accounting offers opportunities which are perhaps even more attractive. The office manager and cost accountant are just beginning to receive the recognition which the importance of their work justifies. Because of the keen competition and complex conditions existing in modern business, business men now realize that it is of the first importance that their office and factory records should be designed and kept so as to give accurate and detailed information concerning the operations of the various departments of the business. A modern accounting system serves not only as a record of transactions but, if properly installed and operated, it provides a reliable and flexible check upon the operations of the business by reflecting both carelessness and dishonesty on the part of employees, while on the other hand it also records increased efficiency, so that it serves as the best possible index or guide for the business man in observing the operations of his business and in establishing the highest possible standards.

Requirements for Admission

The School is open to all graduates of recognized day high schools upon presentation of evidence of such graduation. It is also recognized that, as the school is distinctly vocational, in certain cases men may be found who have obtained in business the equivalent of the training received in high school. In order to open the School to such men, the Committee on Admissions has authority to admit as regular students men of twenty-five years of age or more who have had at least ten years' business experience of which not less than five must have been in a position of responsibility. The admission of such students is contingent upon their ability to undertake the work of the School profitably, and the committee may require such students to take additional work in high-school subjects or to pass special examinations before being made regular students if, in its judgment, such a course is required.

In the case of men under twenty-five who are not high-school graduates, the committee may require the applicant to pass examinations, to undertake certain additional courses of high-school grade before entering the School, or the committee may permit the applicant to enter the School as a special student on condition that he fulfill certain stipulated academic requirements before he can be classed as a candidate for the degree.

It should be understood that the Committee on Admissions aims to hold the entrance requirements at the equivalent of a four-year high-school course, and the discretion vested in the committee in the case of mature business men is merely a recognition of the obvious fact that a man who has occupied a responsible business position for five years is mentally capable of undertaking the specialized work of the school. For such men the School is the scientific extension of the general training they have already received, and is in line with the modern trend of coöperative education, wherein schools and industries combine to produce a union of theory and practice.

Requirements for Graduation

Candidates for Degree of B.C.S.

Regular students who were enrolled in the School prior to July 1, 1918, will be graduated in accordance with the graduation requirements in force at the time of their entrance.

No student entering after that date, will be considered as eligible for graduation until he has complied fully with the requirements of the Committee on Admissions as set forth on page 17. Furthermore, he must enter the Senior year free from all conditions in the work of preceding years.

The degree of Bachelor of Commercial Science will be conferred upon students who have completed all the term work and examinations prescribed during the regular courses with a grade of 60% (D) or higher, subject to the special rules regarding attendance.

In addition to completing the regular work of the School, the Board of Trustees may at their discretion require proof that the student has had sufficient business experience to warrant his receiving the degree.

Candidates for the Degree of M.C.S.

Candidates for the degree of Master of Commercial Science must hold the degree of Bachelor of Commercial Science or its equivalent from an approved school of commerce and finance. Candidates for this degree are required to take a two-year graduate course subject to the approval of the faculty, and to pass examinations upon the subjects pursued. They are also required to prepare an elaborate thesis on a subject approved by the faculty.

Minimum Requirements for Attendance

Students complying with the minimum rule of seventy-five per cent attendance at the lectures in each course, will receive

ATTENDANCE—EXAMINATIONS

credit for such courses at a passing mark of 60% (D). Students whose attendance does not reach seventy-five per cent, but who have been present at more than fifty per cent of the lectures, and who present sufficient excuses for absences beyond the seventy-five per cent requirement, will receive credit for courses in which they obtain a final mark of 75% or higher.

Where a student does not present sufficient excuses to bring him within the preceding rule, or where he is not present at fifty per cent of the lectures, no credit either for attendance or for work completed will be given. No excuse is available against this rule.

To receive credit for attendance, a student must be in the classroom during the entire lecture period unless excused in writing by the Dean.

Examinations

Midyear examinations are given at the end of the first term, and final examinations are given during the last two weeks of the School year.

Students who pass an examination will not be given an opportunity to take the examination over again with the hope of raising the mark.

Regular make-up examinations for students who are conditioned in any subject will be held during the evenings of the week of September 8 to 12 inclusive.

Make-up examinations cannot be given except as scheduled above, although any student who is conditioned may take a later regular midyear or final examination in the same subject and receive credit for the course. If the student fails to pass the first time, the mark on the make-up examination will not be higher than 75% (C) regardless of the excellence of the work.

In case a student is unable to be present at a regular examination in a course, and presents a sufficient excuse for his absence, he may take the examination at any regularly scheduled make-up or final examination in the same course, and will receive full credit for whatever grade he obtains on account of the fact that such examination will be his first attempt to pass off the course.

CONDITIONS—CREDITS

In case a student desires to have a special examination at some time other than that shown on the regular schedules, the Dean of the School may in his discretion grant such request provided the student pays a sufficient fee to reimburse the School for all expenses in the preparation, giving, and correcting of the examination.

Conditions

Students who are conditioned and whose degrees are postponed on that account must make up their conditions within two years after the date on which they would have graduated under normal circumstances. After that time the School degree will not be granted to such students under any circumstances.

Students whose term work and examinations are not completed at the end of the school year automatically become special students, and to be considered candidates for the degree must pass off the examinations and complete the term work before the opening of the next school year.

No student may enter the Senior year whose work is not complete up to the close of the Junior year.

Credit for Courses Completed in Other Institutions of College Grade

Students who have completed courses in other institutions of college grade will be given credit for such courses upon presenting evidence that such courses were satisfactorily completed, that they are equivalent to the corresponding courses offered by the School of Commerce and Finance, and by passing the final examination in the course for which they desire credit. In case it is desired to take this examination specially, the regular fee for special examinations shall apply, but the applicant may, if he so desires, wait until the final examination is regularly given. In this case, however, credit for attendance in the course is given provided the student passes the final examination. If the student does not pass the final examination the course must be repeated.

Books and Stationery

The expense for books and stationery varies according to the course or group of subjects selected. It amounts to approxi-

LECTURE NOTES—TERM WORK

mately \$10 per year for any of the regular courses. For any one of the lecture courses it averages about \$3.

Lecture Notes

Notes are issued at cost to the students in the major subjects. The use of these notes, not only as a means of preparing for examinations, but as a reference library in later accounting practice, renders their purchase desirable. Notes are sold on the distinct understanding that they are for the personal use of the student purchasing them.

Term Work

The quantity of term work required to be corrected during the year and the fact that the schedule of term work is progressive, so that each succeeding problem depends for its value to the student upon the completion of the previous problems, makes it essential that a student complete this work at the time required. Furthermore, if the work is not completed promptly it is very probable that the instructor will explain the problem in class and the student will thus be deprived of the opportunity of solving the problem independently.

To encourage the turning in of prompt work and to make up for the unfairness caused by allowing high marks to men who did not turn in problems until an explanation has been given in class, 12½% will be deducted from the grade for each week's delay, or fraction thereof, in turning in the work, until a possible maximum of 75% is reached. Sickness requiring a doctor's services may be accepted in the discretion of the Dean as a reason for extending the time for turning in work, but no other excuse will avail.

Return of Papers

All problems and examinations are carefully examined and graded, and are returned to the student as promptly as possible. After the return of the papers the instructors explain the questions and answers to the students and discuss any matters on which further information is desired.

HONORS

Honorary Distinction

Two honorary distinctions are granted at the time of conferring the degree of Bachelor of Commercial Science:

With Highest Honor, to those who complete all term work and examinations throughout their course with at least 90% of A's and no marks below B.

With Honor, to those who complete all term work and examinations throughout their course with at least 50% of A's, and, of the balance, 75% of B's.

To entitle a student to honors, the work of the School must have been completed within the normal limits of the course.

As honorary distinction is based wholly upon the excellence of the work performed by the student in the school, students obtaining credit for courses taken elsewhere cannot count such credits toward honors. The courses credited will be eliminated in determining the granting of honors, and only the marks covering work done in the school will be considered.

General Information

Worcester Branch

The Worcester Branch of the School of Commerce and Finance has now been in operation for two full years, and the success which has attended the work is an indication both of the quality of the instruction and of the interest and ambition of the Worcester men. The classes at Worcester show an excellent understanding of the work given and in every way maintain the same high standards required in Boston.

The Worcester Branch is under the direct supervision of the School of Commerce and Finance, and work done there will count toward the degree of Bachelor of Commercial Science.

Further extensions of the school work are planned in the near future.

College Graduates

The excellent opportunities offered in the comparatively new field of professional accountancy, the demand for specially trained men for business administrative positions, and the opportunities in financial institutions open to properly qualified men, should be of interest to college graduates who contemplate business careers. The School of Commerce and Finance offers to such men an opportunity to acquire through its evening courses such practical knowledge as will be of greatest service to them.

Commercial Teachers

There is a demand for teachers of accounting, economics, business law, etc., and the work is both pleasant and remunerative. High schools throughout the country are adding commercial subjects to their programs; many of them are offering elaborate four-year commercial courses; and commercial high schools are not uncommon in our larger cities. The field of commercial teaching offers most attractive opportunities to those who are properly prepared.

It is very desirable for commercial teachers to possess a more advanced knowledge of the subjects which they teach than they

GENERAL INFORMATION

expect their students to acquire. A competent commercial teacher should have more than a text-book knowledge of his subject. He should endeavor to acquire a practical knowledge of modern bookkeeping practice, the science of classification, principles of economics, business law, corporation finance, and business methods and organization. Experience has shown that commercial teachers grasp the subject of higher accounting very readily. This may be accounted for by the fact that their teaching experience promotes habits of care and precision and a conscientious regard for details. Some of the most essential characteristics of a successful accountant are highly developed in the commercial teacher. The course offered by this School afford a splendid preparation for those who desire to prepare for teaching commercial subjects.

Social Opportunities

The successful completion of any of the courses offered by this School requires close application and persistent effort. In order to relieve the strain of study as much as possible, the student body of the School holds periodical "get-together" meetings which afford opportunity for the students to form acquaintances among the members of their own and other classes.

The splendid equipment of the Y. M. C. A. building, including its gymnasium, both indoor and outdoor, swimming pool, bowling alleys, tennis courts, etc., are at the disposal of students at special rates.

Board and Rooms

There are 267 attractive rooms in the dormitories of the Association building, the weekly rate ranging from two to four dollars. The demand for these rooms is so great that it is very difficult to secure one except by filing an application well in advance. Such applications should be filed with the Office Secretary, 136 Huntington Avenue.

The School office will render assistance to those who desire rooms in private families, with or without board. Excellent meals are served in the Association restaurant, at reasonable rates.

Tuition Fees

The rates below apply to new students entering after July 1, 1919. Regular students previously enrolled will continue at rates in force at the time of their entrance.

Regular Students

In the regular courses, tuition fees include membership for one year in the Boston Young Men's Christian Association.

Four year course, \$80 for each of the first two years (two nights per week), \$95 for each of the last two years (three nights per week). Payable, for first two years, \$30 on entering, \$25 on December 1, \$25 on February 1; for the last two years, \$35 on entering, \$30 on December 1, \$30 on February 1.

Three year course, open to men who have passed the examination for advanced standing, \$95 per year (three nights per week). Payable \$35 on entering, \$30 on December 1, \$30 on February 1.

Enrollment as a regular student is understood as indicating the intention of the student to complete at least a full year's work, and the plans of the school as to instructors, class rooms, etc., are based on this assumption.

Special Students

Any of the courses offered by the School of Commerce and Finance may be taken by special students without regard to entrance requirements. A special student, however, is not considered a candidate for a degree, although if he desires to change to a regular course and conforms to the requirements for entrance he will be given credit for such subjects as he has passed successfully.

The courses in the following schedule may be taken by special students separately or in any combination desired (provided it

Prices to Special Students

Course No.	Name	Day of Week	Hour	Begins	Ends	Price	Described on Page
<i>Accounting</i>							
101	Elementary Accounting	Mon. Wed.	7.15 8.15	Sept. 22	May 12	\$63.00	32
201	Sophomore Accounting	Mon. Wed.	7.15	Sept. 22	May 12	63.00	32
202	Advanced Accounting	Mon. Thurs.	7.15 7.15	Sept. 22	May 13	84.00	33
301	Accounting Problems	Mon.	7.15	Sept. 22	May 17	42.00	33
302	System Building	Fri.	7.15	Sept. 26	May 14	42.00	34
303	Business Mathematics	Wed.	8.15	Sept. 17	March 3	16.00	34
401	Cost Accounting	Mon.	7.15	Sept. 22	May 3	40.00	35
402	Auditing	Fri.	7.15	Sept. 19	April 23	40.00	35
<i>Law</i>							
121	Contracts and Agency	Wed.	7.15	Sept. 24	Dec. 10	9.00	36
321	Negotiable Instruments, Sales and Carriers	Wed.	8.15	March 10	May 19	9.00	36
421	Real Estate, Probate, Partnership, Corporations, Bankruptcy, Insurance	Wed.	8.15	Sept. 24	April 28	20.00	37
<i>Economics and Finance</i>							
231	Principles of Economics	Wed.	8.15	Sept. 24	May 12	21.00	37
331	Banking	Wed.	7.15	Sept. 24	Nov. 12	6.00	38
332	Public Utilities	Wed.	7.15	Nov. 19	Jan. 21	6.00	38
333	Corporation Finance	Wed.	7.15	Jan. 28	May 12	11.00	38
<i>Business Organization</i>							
(See folder "Business Administration Courses" issued July 15, 1919, for complete list.)							
141	Business English	Wed.	7.15	Dec. 17	May 19	15.00	38
441	Industrial Organization	Wed.	7.15	Sept. 24	April 28	20.00	39

Add \$2.00 to total cost of desired combination to cover cost of one year's membership in the Boston Y. M. C. A.

TUITION FEES

does not conflict with the regular program of the School), at the prices indicated. After arriving at the total cost of the combination of subjects desired, it will be necessary to add \$2 to the total to cover one year's membership in the Boston Y. M. C. A.

Special students whose tuition amounts to less than \$35, are expected to pay in full at the time of registration. Where the tuition for special courses exceeds \$35 it is payable \$25 at the time of registration, one half of the remainder on December 1, the balance on February 1.

Registration

A matriculation fee of \$5 is charged at the time of registration, which amount will be credited on the first tuition payment at the time it is made. This registration fee is not returnable in case a student later withdraws from the school. Registrations for the coming school year may be made at any time after August 1.

To avoid standing in line on the opening night, obtain enrollment blanks in advance by mail or telephone request. Waiting until the last minute before enrolling usually causes considerable delay to students in reaching their classes.

Graduates of high schools or business schools should be prepared to submit the necessary diploma or other certificate at the time of registration.

Applications must be approved by the Dean of the School before the applicant is admitted as a regular student.

Detailed Description of Courses
AND
Schedule of Classes
OF
Professional Accountancy Course

Special folder on "Business Administration Courses" issued July 15, 1919, contains complete list of elective and special subjects in the administration course.

SCHEDULE OF CLASSES

First Term (Starts September 22)

		Monday	Tuesday	Wednesday	Thursday	Friday
	SENIOR YEAR.					
Final Year of both courses.	Cost Accounting, 401	7.15-9.15				
	Industrial Organization, 441			7.15-8.15		
	Law, 421			8.15-9.15		
	Auditing, 402					7.15-9.15
	JUNIOR YEAR.					
Third Year of 4-year course.	Advanced Accounting Problems, 301	7.15-9.15				
	Banking, 331			7.15-8.15		
Second Year of 3-year course.	Public Utilities, 332			7.15-8.15		
	Business Mathematics, 303.			8.15-9.15		
	System Building, 302					7.15-9.15
	ADVANCED STANDING SOPHOMORE.					
First Year of 3-year course.	Accounting, 202	7.15-9.15			7.15-9.15	
	Law, 121			7.15-8.15		
	Business English, 141			7.15-8.15		
	Principles of Economics 231.			8.15-9.15		
	REGULAR SOPHOMORES.					
Second Year of 4-year course.	Accounting, 201	7.15-9.15		7.15-8.15		
	Principles of Economics 231 .			8.15-9.15		
	FRESHMEN.					
First Year of 4-year course.	Accounting, 101	7.15-9.15		8.15-9.15		
	Law, 121			7.15-8.15		
	Business English, 141			7.15-8.15		

¹ Ends November 12.

² Commences November 19.

³ Ends December 10.

⁴ Commences December 17.

The above schedule includes only the courses comprised in the professional accountancy course. Supplementary courses in business administration subjects are described in folder on "Business Administration Course" issued July 15, 1919.

SCHEDULE OF CLASSES

Second Term (Starts January 26)

	Monday	Tuesday	Wednesday	Thursday	Friday
SENIOR YEAR.					
Cost Accounting, 401	7.15-9.15				
¹ Industrial Organization, 441			8.15-9.15		
² Law, 421			7.15-9.15		
Auditing, 402					7.15-9.15
JUNIOR YEAR.					
Advanced Accounting Problems, 301	7.15-9.15				
Corporation Finance, 333			7.15-8.15		
³ Business Mathematics, 303			8.15-9.15		
⁴ Law, 321			8.15-9.15		
System Building, 302					7.15-9.15
ADVANCED STANDING SOPHOMORE.					
Accounting, 202	7.15-9.15			7.15-9.15	
Business English, 141			7.15-8.15		
Principles of Economics 231			8.15-9.15		
REGULAR SOPHOMORE.					
Accounting, 201	7.15-9.15		7.15-8.15		
Principles of Economics 231			8.15-9.15		
FRESHMEN.					
Accounting, 101	7.15-9.15		8.15-9.15		
Business English, 141			7.15-8.15		

¹ Owing to Junior law course, beginning March 10, Industrial Organization will be given from 8.15-9.15.

² After March 10, from 7.15-8.15.

³ Ends March 3.

⁴ Commences March 10.

See note on opposite page for further courses in business administration subjects.

Description of Subjects

NOTE: Regular students will be governed by rates on page 25. The prices below are intended to apply only when one or more subjects are chosen by students who are not regularly enrolled in the school.

In choosing special subjects or a special combination of subjects, if the subjects chosen fill three complete evenings per week for the full year, the maximum charge will be \$95.00. For two full evenings, the maximum is \$80.00. In all cases there is an additional charge of \$2.00 for one year's membership in the Boston Y. M. C. A. This charge applies to the total price of the combination of subjects chosen or to the maximums above quoted.

Accounting Department

Accounting 101 (Freshman)

This subject is required throughout the Freshman year of the four-year course. It is designed to cover the fundamental principles of accounting theory and practice. Students are given practice work illustrating the simplest methods of double entry bookkeeping. Carefully prepared sets which illustrate accounting principles in conformity with modern practice are required to be worked up. Frequent lectures are given bearing upon principles, classification of accounts, bookkeeping technique, and the form and arrangement of financial statements. A feature of the course is the large amount of practice in the preparation of financial statements, adjustments, and closing entries. Upon the completion of this subject, students will have acquired a practical knowledge of double entry bookkeeping.

Monday evening from 7.15 to 9.15, and Wednesday evening from 8.15 to 9.15.

Begins September 22, 1919; ends May 12, 1920. Price \$63.00.

Accounting 201 (Sophomore)

This course is a logical continuation of Accounting I, and is required throughout the Sophomore year of the four-year course. The work of the course is best divided into two parts as follows:

(a) Theory and Practice of Advanced Bookkeeping

This consists of practice sets and exercises supplemented by lectures illustrating the principles of advanced bookkeeping as applied to mercantile and manufacturing businesses. The books and accounts peculiar to corporations and to manufacturing concerns are studied in detail. Lectures and exercises are also given bearing upon the accounting features

DESCRIPTION OF COURSES

peculiar to various other lines of business. The accounts of institutions, such as libraries, colleges, etc., are studied, and some attention is given to the accounts of private individuals and professional men. A study is made of the Federal Income Tax law as it relates to individuals and to corporations, and practice is given in making out the forms required to be filed.

(b) Financial Statements and Practical Problems

One evening each week is devoted to lectures and practice work dealing with the form and arrangement of financial statements applicable to different businesses and to institutions, and to the solution of accounting problems of all kinds. On a large number of evenings allotted to this work the students work out an assigned problem within a given time. This practice on problems which they have had no opportunity to study in advance develops in the student confidence and self-reliance and the ability to think quickly and accurately, and at the same time to present the solution in a neat and finished form.

Careful attention is given to the examination of all exercises and problems passed in; all work is carefully examined, corrections noted, graded and returned.

Monday evening from 7.15 to 9.15, and Wednesday evening from 7.15 to 8.15.

Begins September 22, 1919; ends May 12, 1920. Price \$63.00.

Accounting 202 (Advanced Standing Sophomore)

This course presupposes a familiarity with the principles of bookkeeping and is open only to men who have passed the entrance examination for advanced standing. The course starts with a consideration of advanced bookkeeping as applied to mercantile and manufacturing businesses. Students are required to write up a carefully prepared set of books illustrating the accounting methods of manufacturing concerns and corporations, with special emphasis on the manufacturing accounts. Practice work is given in Adjusting and Closing Entries, Balance Sheet, Profit and Loss Statements, special lectures and exercises upon advanced theory of accounts, and on accounting principles and procedure.

At the end of the year, students in this course will take the same examination as those in Accounting 201. That is, by means of their preliminary knowledge of bookkeeping, students in this course are enabled to do in one year as much accounting work as the four-year students do in the first two years.

Monday and Thursday evenings from 7.15 to 9.15.

Begins September 22, 1919; ends May 13, 1920. Price \$84.00.

Accounting 301 (Advanced Accounting Problems)

Optional during the Junior year.

The work of this course consists of lectures, demonstrations, and discussions, and of problems assigned regularly for solution outside of class. The problems are carefully chosen and cover a wide range of topics, such as Partnership Settlements and Adjustments, Advanced Corporation Exercises, Bond Issues and Sinking Funds, Consolidations, Holding Companies, Receiverships, Accounting for Trustees and Executors, Branch Stores, Consignments, Special Investigations, and numerous problems of a miscellaneous character. Most of the problems are selected from recent

DESCRIPTION OF COURSES

C. P. A. examinations held in the various states. The problem work is supported and supplemented by lectures and demonstrations on the principles involved.

Test examinations are given from time to time, which are similar in their scope and requirements to the examinations set by the various state boards and by the American Institute of Accountants. This practice develops the qualities of initiative, accuracy, and analytical power, and the ability to accomplish a prescribed amount of work in a given time.

Monday evening from 7.15 to 9.15.

Begins September 22, 1919; ends May 17, 1920. Price \$42.00.

Accounting 302 (System Building)

Required throughout the Junior year. The purpose of this course is to teach the fundamental principles of System Building as applied to all classes of business. The development of the subject proceeds by lectures, home study and practice work, and the demonstration of systems now in practical operation in various branches of business. The data for all systems is taken from current commercial practice, and by means of the lectures a judicious combination of theory and practice is effected. The preliminary work includes a discussion of loose-leaf and bound record books, of the various styles and types of binders and bindings, etc., illustrating their good and bad features. This is followed by lectures on the different kinds, weights, grades, and prices of commercial papers.

The students are then given practice in ruling and lettering various standard accounting forms. A series of lectures is given on the functions of the various books of entry. Then follows a discussion and demonstration of several complete accounting systems which are in actual use and which have been carefully selected so as to include a great variety of forms and to illustrate the accounting methods of a wide variety of businesses. This part of the work includes the following systems:

An automobile sales and service agency	A wholesale leather concern
A wholesale and retail stationery store	A construction company
	A club
	A hospital

The forms used in these systems are supplied to the students at actual cost.

Lectures on the methods of writing up a set of instructions are given to the class, following which the students are required to write up a model set of instructions for one of the systems previously demonstrated. Toward the end of the course the student is required to design two accounting systems from data supplied by the instructors.

Friday evening from 7.15 to 9.15.

Begins September 26, 1919; ends May 14, 1920. Price \$42.00.

Accounting 303 (Business Mathematics)

Required in the Junior year.

This is a course in certain processes required in modern business practice.

The subjects will be taken up somewhat in this order:

Simple Interest, Bank Discount, Equation of Payments and Accounts; a brief study of Logarithms; Compound Interest and Present Worth; Annuities Certain; Bonds: Price to Yield a Given Rate When the Price is Given, Optional Redemption, Serial Bonds; Valuation of Assets, Per-

DESCRIPTION OF COURSES

petuities, Cost of Increasing the Life of an Asset; Amortization; Sinking Funds; Depreciation, Wearing Value of an Asset, Composite Life of a Plant; Certain Problems in Life Insurance and Fire Insurance. There will be also a discussion of Graphs, the use of the Slide Rule, and Foreign Exchange.

Throughout the course emphasis will be laid on processes rather than on theory. Abridged multiplication and division will be used rather than logarithms whenever possible. Tables will be used whenever possible, and the formulæ and rules given will be mostly simple.

Wednesday evening, 8.15 to 9.15.

Begins September 17, 1919; ends March 3, 1920. Price \$16.00.

Accounting 401 (Cost Accounting)

Optional in the Senior year.

This subject, which logically follows that of System Building, seeks to familiarize the student with the chief principles relating to the design of accounting systems for manufacturing concerns, special attention being paid to the finding of production costs. The various systems used for instruction purposes are drawn from current practice, and the best text-books available are used to supplement the work. The work of the course includes a careful study of the various methods of distributing "overhead" expenses, with special emphasis upon the "production factor" method.

During the progress of the work instruction is given on the fundamental principles of cost accounting and on various methods of recording and analyzing the different elements of manufacturing costs. Then follows a discussion and demonstration of several systems exemplifying the fundamental "production order" and "process" methods of costing. The systems illustrated are in actual use and are based on standard practice. Throughout the course the student's attention is called to the faults of over-systematization as well as to the true purposes of a properly designed cost accounting system. The course ends with a series of problems on the laying-out and installation of cost systems.

Monday evening from 7.15 to 9.15.

Begins September 22, 1919; ends May 3, 1920. Price \$40.00.

Accounting 402 (Auditing)

Optional in the Senior year of the Professional Accountancy course.

The lectures deal with auditing as applied to mercantile and manufacturing enterprises, financial institutions, clubs, public utilities, insurance companies, etc., and with special investigations, the preparation of audit programs and audit reports.

The quizzes are conducted by assigning a certain number of C. P. A. questions in auditing and then calling for answers to those questions at the next meeting of the class, at which time the instructor discusses the answers submitted. The members of the class are required to submit written answers to a certain number of audit questions each week, which are corrected, graded, and returned to them the following week. Additional C. P. A. questions are discussed informally in the class, affording excellent preparation for those who intend taking the C. P. A. examinations.

Friday evening from 7.15 to 9.15.

Begins September 19, 1919; ends April 23, 1920. Price \$40.00.

DESCRIPTION OF COURSES

Department of Business Law

Business Law is required in the first, third, and fourth years of all the regular courses.

Law 121

Contracts

This course deals with the subjects of consideration, offer and acceptance, parties, legal and illegal contracts, forms of contracts, interpretation of contracts, assignment of contracts, and the methods of discharging contracts.

These subjects will be dealt with from the business man's point of view rather than that of the lawyer, and the course should furnish a sufficient grounding to cover any ordinary set of facts arising in the usual course of business.

Agency

It is not often realized how large a proportion of business is done by agents. From the smallest messenger boy to the president of the largest manufacturing concern, the relation of principal and agent is constantly in evidence. It is therefore important to know who may be an agent, how he is appointed, what his authority is, his relations with his principal and with third parties, the relations between the principal and third parties, and how an agency may be terminated.

This course is designed to give this information briefly and yet in such a manner that it may be applied readily when occasion requires.

Wednesday evening from 7.15 to 8.15.

Begins September 24, 1919; ends December 10, 1919. Price \$9.00.

Law 321

Bills and Notes (Negotiable Instruments Act)

Nearly every business transaction which does not involve the transfer of actual cash is affected in some way by the Negotiable Instruments Act, now in force in more than three fourths of the states.

It is therefore important to know something about the form of a negotiable instrument, what requirements must be met to make it negotiable, how it may be signed, whether or not consideration is necessary, how it may be negotiated, what the rights of the holder are, what the liabilities of the parties are, how it must be presented for payment, how an instrument may be discharged, what a bill of exchange is, and how it differs from a check.

These are only indications of the points covered in the course, which will follow closely the construction of the Negotiable Instruments Act.

Sales of Personal Property

Scarcely a day passes without bringing up a case of sales of personal property. Often a large amount of money hangs on the determination of the legal question of passing title. Is delivery essential to pass title? Must payment be made to gain title? What is a contract of sale? What is a warranty? What can the seller do to protect his rights? What are the rights of the buyer?

DESCRIPTION OF COURSES

All these questions, and more, are pertinent to the subject of sales, and the consideration of them will constitute the subject-matter of the course.

Wednesday evening from 8.15 to 9.15.

Begins March 10, 1920; ends May 19, 1920. Price \$9.00.

Law 421

Real Estate Law

Covers the handling of real estate, including the various kinds of titles and interests; the occupation of real estate, both as owner and as tenant; the making of leases; liabilities arising as a result of leases; the transferring of real estate, including various kinds of conveyances. Mortgages, their creation, assignment, foreclosure, discharge, etc.

Probate Law

The appointment of an administrator or executor, his liabilities and his rights, the right of inheritance, the duties of trustees, guardians, the making out of executors' and trustees' accounts, etc.

Partnership

Covers the various kinds of partnership agreements, the rights and liabilities of each partner, the personal liability of each partner to third parties, the methods of dissolving partnerships, etc.

Corporations

The formation of a corporation, its by-laws and officers; the powers and liabilities of directors; transfers of stock, rights of minority stockholders, corporation reports and rates, etc.

Bankruptcy

The Federal Bankruptcy Act, together with insolvency assignments, receiverships, etc.

Insurance

Covers the various kinds of insurance,—life, fire, accident, etc.; describes the standard forms of policies, describes what interests in property are insurable, etc.

Wednesday evening, from 8.15 to 9.15. After March 3, 1920, change to 7.15 to 8.15.

Begins September 24, 1919; ends April 28, 1920. Price \$20.00.

Department of Finance

Finance 231 (Principles of Economics)

Required throughout the Sophomore year.

This subject consists of a study of the principles underlying modern business and industrial conditions. The work is carried on by means of lectures, text-book assignments, and class-room discussions. The course,

DESCRIPTION OF COURSES

although concerned with the theory or rather the abiding principles of economic science, seeks constantly to bring out the application of these principles to ordinary business transactions of the present time. The lectures of the first half-year cover the various means of producing wealth and how it becomes distributed throughout the community. The lectures of the second half-year discuss special problems which bear upon present-day industry, such as money, credit, taxation, coöperation, the tariff, and socialism.

Wednesday evening from 8.15 to 9.15.

Begins September 24, 1919; ends May 12, 1920. Price \$21.00.

Finance 331 (Banking)

Required in the first term of the Junior year.

This course in banking covers an outline of practical administration of a modern bank. It deals with such subjects as the organization and administration of a bank, and the functions and duties of the different officers, the clearing house, federal reserve bank and its operation.

Wednesday evening from 7.15 to 8.15.

Begins September 24, 1919; ends November 12, 1919. Price \$6.00.

Finance 332 (Public Utilities)

Required in the first term of the Junior year.

The course deals with the operation, the financial organization, and public policy of electric, gas, and water utilities. The following are some of the topics discussed: the promotion, financial management, extension, and reorganization of operating companies; the holding company; rate-making in steam and hydro-electric plants; rate-making for gas and water works; accounting for depreciation; the study of different systems of accounting; the consolidation of companies; history of legislation and important cases covering rates, and the jurisdiction of state commissions.

Wednesday evening from 7.15 to 8.15.

Begins November 19, 1919; ends January 21, 1920. Price \$6.00.

Finance 333 (Corporation Finance)

Required in the second term of the Junior year.

This course covers the principles involved in the financial acts of a modern business corporation. The work will be carried on by means of lectures and assigned reading. The course begins with an historical survey of the modern corporation, especially the tendencies which have created it. Then will follow detailed discussions of the problems confronting present-day corporations, including all the steps of promotion, expansion, and reorganization. The course emphasizes the economic and business aspects rather than the legal aspects of corporations.

Wednesday evening from 7.15 to 8.15.

Begins January 28, 1920; ends May 12, 1920. Price \$11.00.

Department of Business Administration

Administration 141 (Business English)

Required in the first year of the regular courses.

Business English centers about the letter in its various forms,—the letter of application, the letter of inquiry, the collection letter, the letter of adjustment, the sales letter, etc. To write effective business letters is primarily the aim of students of Business English. To accomplish this

DESCRIPTION OF COURSES

end, it is necessary to master the fundamental principles of composition, including vocabulary building, sentence and paragraph structure, punctuation, and spelling. The application of these principles to the English of business is the chief aim of the course.

Preliminary to the work in letter writing, practice will be given in Business Narration, Business Description, Business Exposition, and Business Argumentation, all of which types of composition enter greatly into the writing of successful business letters. Thereafter, intensive work will be given in the various types of letters, as well as in business reports. Greatest stress will be put upon the writing of sales letters.

Wednesday evening from 7.15 to 8.15.

Begins December 17, 1919; ends May 19, 1920. Price \$15.00.

Administration 441 (Industrial Organization)

A practical series of talks on the make-up and operation of the modern industrial system, covering, (a) under the factory section, men, machinery, and materials; (b) under the office section, selling, advertising, credit, and financial subjects; and (c) under the administrative section, manufacturing records, organization, systematizing, and administration.

Wednesday evenings from 7.15 to 8.15 (after March 3, 1920, lectures will be from 8.15 to 9.15).

Begins September 24, 1919; ends April 28, 1920. Price \$20.00.

For complete schedule of administrative courses, see folder on this subject issued July 15, 1919. Copy will be sent on request.

GRADUATES

Graduates of the School of Commerce and Finance

1914—Bachelor of Commercial Science

Daniel Asher, B. S., LL.B., Worcester	Raymond O. Keating, Woburn
Thomas H. Burton, Winchester	Joseph A. Kuebler, Winthrop
Einar W. Christenson, Arlington	William J. Lyons, Boston
George S. Clarkson, C.P.A., Roxbury	William J. Magee, C.P.A., Boston
William S. Cooper, Medford	Harvard L. Mann, C.P.A., East Dedham
Charles H. Cornell, C.P.A., Chelsea	Harold J. Parsons, A.A., Worcester
William B. Cushing, Newton	Abijah Pearson, Roxbury
Frederick W. Davison, Dorchester	Isaac Rich, Roxbury
William L. Esterberg, C.P.A., Reading	Charles F. Rittenhouse, C.P.A., Jamaica Plain
Herbert Fallon, Dorchester	William D. Smith, C.P.A., Dorchester
Harry H. Ferngold, East Boston	Walter F. Spinney, Allston
Herbert C. Fraser, Watertown	Maurice B. Spinoza, Roxbury
*Benjamin W. Fuller, Milton	*Charles E. Stearns, C. P. A., Boston
Guy L. Harvey, Boston	Robert M. Taylor, West Somerville
Edgar P. Hawes, Roslindale	

1915—Master of Commercial Science

William S. Cooper, B.C.S., Medford	William J. Lyons, B.C.S., Boston
Charles H. Cornell, B.C.S., C.P.A., Chelsea	Harvard L. Mann, B.C.S., C.P.A., East Dedham
Herbert Fallon, B.C.S., Dorchester	Isaac Rich, B.C.S., Roxbury
Harry J. Ferngold, B.C.S., East Boston	William D. Smith, B.C.S., C.P.A., Dorchester
Herbert C. Fraser, B.C.S., Watertown	Maurice B. Spinoza, B.C.S., Roxbury
Joseph A. Kuebler, B.C.S., Winthrop	*Charles E. Stearns, B.C.S., C.P.A., Boston

1915—Bachelor of Commercial Science

Clarence E. Akerstrom, Medford	Frank L. McCarthy, Arlington
Benjamin Asher, Worcester	Edwin E. McConnell, Hyde Park
Robert Bruce, Roxbury	Ralph C. MacDonald, Walpole
Philip F. Clapp, C.P.A., Roxbury	William A. Mansfield, Somerville
Wilfred A. Clark, Medford	Lester C. Nutting, West Roxbury
Casper Cohen, C.P.A., Chelsea	Herbert L. Perry, West Somerville
James B. Conway, Boston	James C. Purinton, Beverly
Albert B. Curtis, Roxbury	Edward C. Richardson, Waltham
Royal M. Cutler, Brockton	James F. Rockett, Boston
Willis H. Doe, Medford	William W. Sharpe, Forest Hills
Henry T. Dolan, Salem	Dale M. Spark, C.P.A., Dorchester
Clifton W. Gregg, Beverly	Ralph G. Stetson, Boston
Milburn D. Hill, Salem	Frank J. Sullivan, South Boston
Edward I. Hollander, Chestnut Hill	Dana S. Sylvester, LL.B., Brookline
Robert H. Hunter, Dorchester	William E. Tierney, Lawrence
Edward S. Jenkins, Quincy	

* Deceased.

(1915—Concluded on next page)

GRADUATES

(1915—Concluded)

*Irving E. Jones, Brighton	*Earle P. Tyler, Everett
James S. Kennedy, Everett	Bruce R. Ware, Newton
Martin C. Lee, South Boston	Leo Wasserman, C.P.A., Roxbury
John C. Lord, Brookline	William H. Wheeler, Somerville
Myron F. Lord, Dorchester	Carl W. Wright, C.P.A., Somerville

1916—Bachelor of Commercial Science

John B. Andrews, South Framingham	Claude R. Marvin, Boston
Herbert J. Ball, S.B., Lowell	Frederick C. Rivinius, East Weymouth
Ronald B. Chipchase, Melrose	Clarence E. Rosen, Jamaica Plain
James P. Dillon, South Braintree	Joseph S. Snow, Boston
Loren N. Downs, Jr., S.B., Boston	Harry W. Thomas, Melrose
Howard B. Hall, Boston	Alfred T. Timayenis, Revere
Harry I. Kessler, Roxbury	Franklyn P. Trube, Winthrop
Charles Lee, East Boston	William H. Walpole, Winthrop
Joseph Levine, C. P.A., Dorchester	Charles A. Wight, Jr., Cambridge

1916—Master of Commercial Science

Robert Bruce, B.C.S., Roxbury	Herbert L. Perry, B.C.S., West Somerville
-------------------------------	---

1917—Bachelor of Commercial Science

Max Abelman, Roxbury	Effinger E. Hartline, Washington, D. C.
Walter G. Ambrose, Boston	Simon Helman, Dorchester
Paul A. Anderson, Dorchester	Walter G. Hill, A.B., Jamaica Plain
Hyman Berkowitz, Roxbury	George L. Hoffacker, Boston
Alfred L. Billings, Arlington	Arthur H. Holmberg, Cambridge
Samuel Bischoff, Dorchester	James T. Johnson, Jr., C.P.A., Waltham
Elbridge A. Bollong, C.P.A., Allston	Leonard L. Kabler, Roxbury
Charles I. Boynton, Boston	Reuben Kaplan, Boston
Benjamin G. Brooker, Dorchester	Max Katz, Dorchester
George G. Caldwell, Mattapan	George A. Lange, Jamaica Plain
Richard B. Canstick, Auburndale	*Charles C. MacLean, Cambridge
Benjamin A. Carlson, Allston	Elmer A. Merriam, LL.B., West Roxbury
Henry I. F. Carney, Somerville	Robert Pillow, Allston
Carlton N. Chandler, Lowell	Abraham N. Radler, Dorchester
William F. Chaplin, Cambridge	John A. Ryan, Lynn
Ira M. Conant, A.B., C.P.A., Boston	James A. Saunders, C.P.A., Brighton
Michael Edelstein, Boston	Louis I. Shulinski, Worcester
John C. Farrington, Lowell	Nathaniel F. Silsbee, Dorchester
Paul Fishman, Roxbury	Stanton S. Skolfield, Boston
James J. Fox, Boston	Samuel J. Stone, Roxbury
Charles Gale, C.P.A., Dorchester	Francis B. Southwick, C.P.A., Waban
Jack M. Gordon, Malden	Warren E. Wescott, Melrose
James A. Grant, Lowell	Herbert F. Whitmore, Arlington Heights
Clifford E. Guild, Mansfield	
Fred D. Harrington, C.P.A., Somerville	

*Deceased

GRADUATES

1918—Bachelor of Commercial Science

Reginald Amback, Roxbury	Frederic Mitchell, Malden
Abraham Annapolsky, Winthrop	Arthur R. Morse, Andover
Walter H. Apperson, Medford	Leroy C. Murch, Beverly
Ralph S. Bell, South Boston	William A. Murphy, Jamaica Plain
Louis J. Birger, Dorchester	Walter P. Nichols, Melrose
Ernest H. Brooke, Dedham	Thomas A. O'Connell, Boston
Arthur M. Brown, Watertown	Henry Osberg, Malden
Arnold D. Brundage, Salem	Arthur T. Partington, Winthrop
Clarence G. Chapin, Cambridge	Oliver H. O. Pearce, Malden
Ernest R. Ciriack, Jamaica Plain	Ralph W. Peters, C.P.A., Auburn-
Joseph B. Cohen, Worcester	dale
Dennis P. Crimmins, Worcester	Warren W. Petrie, Hyde Park
Paul E. Crocker, Dorchester	Henry A. Plett, South Boston
Percy E. Darling, Melrose	Leroy A. Prull, Dorchester
George A. Dempsey, Salem	Neal D. Randall, Melrose High-
Joseph A. Dudley, W. Somerville	lands
Frank C. Fogg, Dorchester Ctr.	Norman B. Reed, Melrose
James O. Foss, Boston	Joseph G. Riesman, Chelsea
Louis Friedman, Worcester	Louis J. Rosenthal, Roxbury
George Hansen, Dorchester	George J. Saievetz, Chelsea
Maxwell Harris, Dorchester	Royal Shawcross, Esmond, R. I.
Irving E. Heymer, Auburndale	William J. Shield, Medford
Joseph Hinchey, Melrose	Herbert W. Simmons, Lynn
Phillip Isenman, Malden	Frank Solomon, Roxbury
Percival Lantz, Dorchester	Harry F. Standley, Beverly
Albert A. Lappin, Dorchester	Nathan Stern, Boston
William W. Lee, Danvers	J. H. Stewart, East Boston
Edward J. McDevitt, Jr., Charles-	Francis F. Vogel, Roxbury
town	George F. Wagner, Lowell
Alfred B. Mahoney, Somerville	Raymond D. Willard, C.P.A., Con-
Walter J. Mahoney, Worcester	cord
J. H. Melzard, Jr., Hyde Park	Frank H. Wrigley, Quincy
Edward F. Messinger, Roxbury	

1918—Master of Commercial Science

Harry I. Kessler, B.C.S., Dorchester

1919

This catalogue went to press before the names of the graduating class of 1919 could be definitely determined.



NORTHEASTERN COLLEGE

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

School of Commerce and Finance

Established in 1907; incorporated in 1911. Offers three- and four-year courses leading to the degree of B.C.S. (Bachelor of Commercial Science) in Business Administration and Professional Accountancy. Any one passing the examination for advanced standing is enabled to complete the regular courses and secure the degree in three years. Special courses in addition to regular courses.

School of Liberal Arts

A school offering courses of college grade in English, Ancient and Modern Languages, Mathematics, Science, History, Economics, Government, Logic, Psychology, Education, Philosophy, and Journalism. Professors and instructors of New England colleges are engaged. These courses are open to graduates of high schools and to others who can meet the entrance requirements.

School of Law

Established in 1898; incorporated in 1904. Provides a four-year course in preparation for the Bar, and grants the degree of Bachelor of Laws.

Co-operative School of Engineering

Four-year courses in Chemical, Mechanical, Electrical, and Civil Engineering, in coöperation with business firms. Students earn while learning. Open to high-school graduates.

Evening School of Engineering

A school offering four-year courses in Civil, Chemical, Electrical, Structural, and Mechanical Engineering.

For further information concerning any of the above schools, address Northeastern College, 316 Huntington Avenue, Boston, Mass. Tel., Back Bay 4400.

Do Results Count?

More men from Northeastern College School of Commerce and Finance are Massachusetts Certified Public Accountants than from all the other accounting schools in the state combined.

In the last Massachusetts Certified Public Accountant Examination, two-fifths of the successful men were from the School of Commerce and Finance. No other school even approaches this record.

A shipping clerk took up our work three years ago. During last winter he was made a government income tax auditor at double the salary he received when he entered the school.

One graduate had his salary increased two thousand dollars during the time he was engaged in taking our course.

Do Results Count?

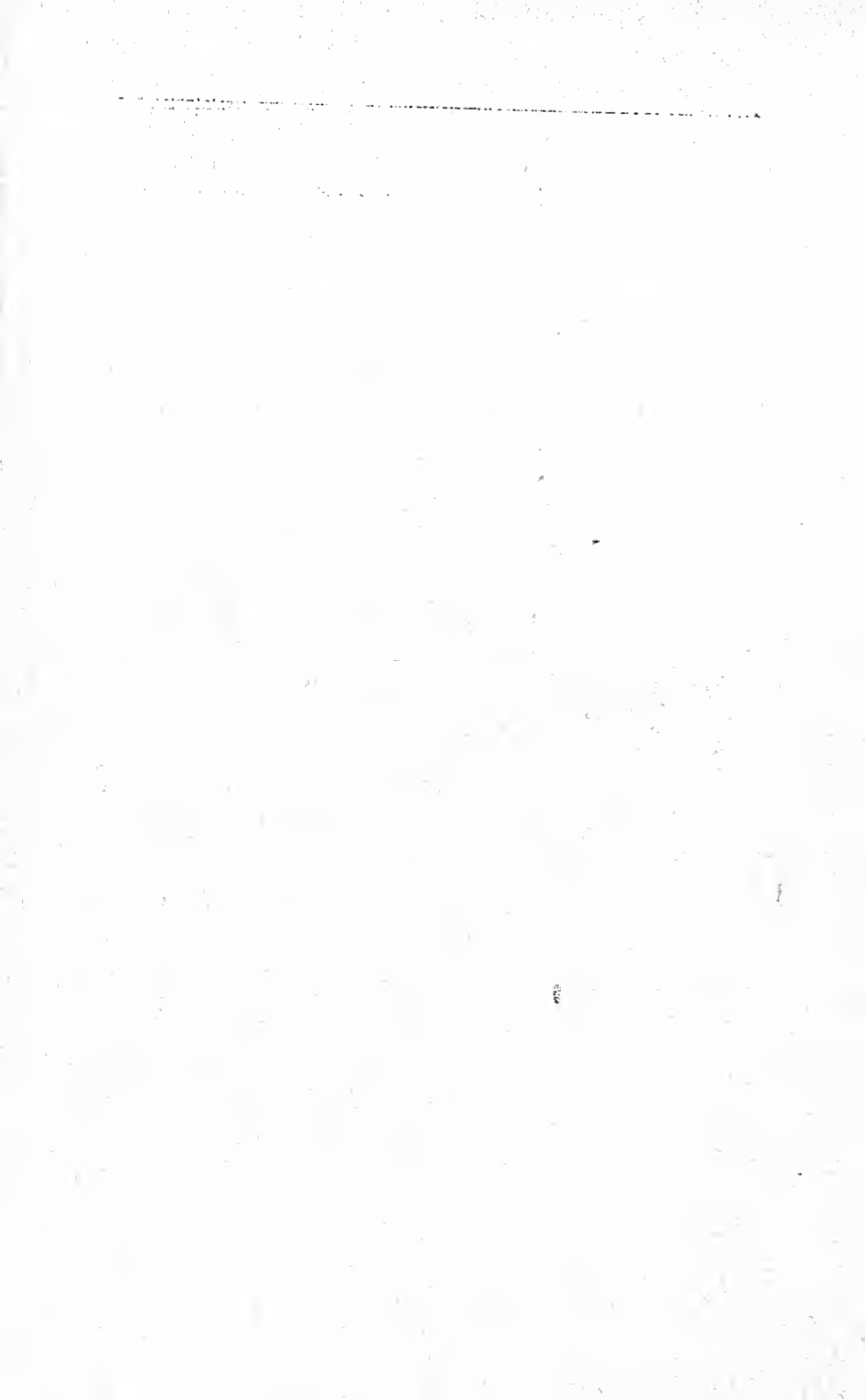
Northeastern College

January **1919**

CATALOG of the **Co-operative School of Engineering**

1919 - 1920

PUBLISHED BY THE
TRUSTEES of NORTHEASTERN COLLEGE
Boston Young Men's Christian Association
Number 316 Huntington Avenue, Boston, Massachusetts



NORTHEASTERN COLLEGE CO-OPERATIVE SCHOOL OF ENGINEERING

BOOKS AND SUPPLIES

March 19, 1919.

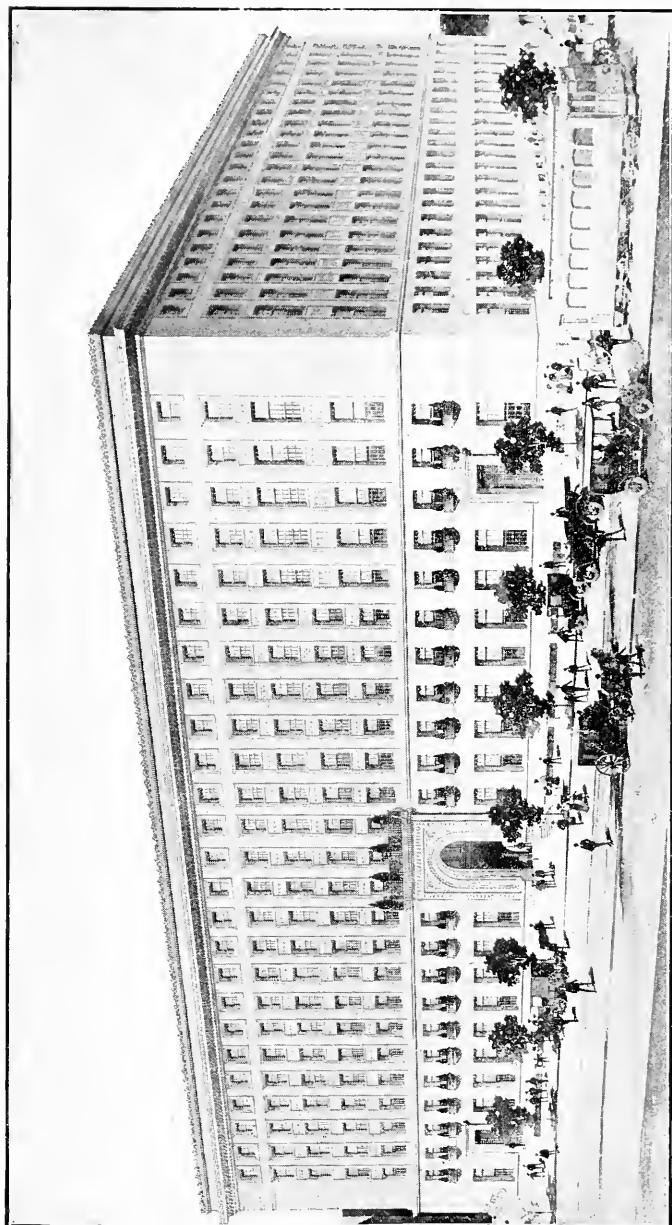
Inasmuch as many of our students desire to purchase their own books and supplies while in school in order to have these for future use after being graduated and inasmuch as the College does not feel justified in continuing the policy of furnishing books and supplies to the students free of charge, the issuing of such supplies will be discontinued in accordance with the following schedule :

No supplies will be furnished free of charge by the School for the first year work after the school year 1918-1919.

No supplies will be furnished by the School for any of the work after the school year 1919-1920.

This action was taken after the 1919-1920 catalog had gone to press and supercedes all statements in the catalog relative to books and supplies.

All supplies may be purchased at the College Book Store at a cost of not exceeding fifteen to twenty dollars per year. The earnings of the students for their services with co-operating firms considerably exceed the cost of tuition, fees, membership in the Y.M.C.A., the cost of books and supplies, and incidental expenses. The purchase of supplies is therefore not a burden to the student.



THE ASSOCIATION BUILDING
Home of Northeastern College

Northeastern College

CATALOG of the Co-operative School of Engineering



1919 - 1920

316 Huntington Avenue
BOSTON, MASSACHUSETTS

YEARLY CALENDAR

1919

JANUARY

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School Periods for Division A indicated by type thus: 1 2 3.
 School Periods for Division B indicated by type thus: 1 2 3.
 Periods when School is not in session indicated by type thus: 1 2 3.

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Calendar 1919

- January 1, Wednesday
New Year's Day (School exercises omitted)
- January 13, Monday
Second Term begins for Division A
- January 27, Monday
Second Term begins for Division B
- February 22, Saturday
Washington's Birthday (School exercises omitted)
- April 19, Saturday
Patriots' Day (School exercises omitted)
- May 26 to June 7 inclusive
Final examinations
- May 30, Friday
Decoration Day (School exercises omitted)
- June 12, Thursday
First Entrance Examinations of Co-operative School of Engineering
- June 9, - September 6
Summer Vacation
- June 11
Annual Commencement
- July
Engineering Practice for Division A commences
- September
Engineering Practice for Division B commences
- September 4, Thursday
Second Entrance Examinations of Co-operative School of Engineering
- September 8, Monday
First term of school year for Division A commences
- September 22, Monday
First term of school year for Division B commences
- November 27, Thursday
Thanksgiving Day (School exercises omitted)
- December 15-27, inclusive
Christmas Recess (School exercises omitted)

Calendar 1920

- January 1, Thursday
New Year's Day (School exercises omitted)
- February 9, Monday
Second Term begins for Division A
- February 23, Monday
Second Term begins for Division B
- April 19, Monday
Patriot's Day (School exercises omitted)
- May 31, Monday
Decoration Day Observance (School exercises omitted)
- June 17, Thursday
Bunker Hill Day (School exercises omitted)
- June 24, Thursday
First Entrance Examination of Co-operative School of Engineering
- June 26, - September 13
Summer Vacation
- June 16
Annual Commencement
- September 9, Thursday
Second Entrance Examination of the Co-operative School of Engineering
- September 13, Monday
First Term of School Year for Division A commences
- September 27, Monday
First Term of School Year for Division B commences
- October 12, Tuesday
Columbus Day (School exercises omitted)
- November 25, Thursday
Thanksgiving Day (School exercises omitted)
- December 18, - January 3, 1921
Christmas Recess (School exercises omitted)

Northeastern College

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Northeastern College

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CHARLES NELSON GREGG, A.M.

Dean of the School of Liberal Arts

GALEN DAVID LIGHT, A.B.

Secretary

Northeastern College

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CARL STEPHENS ELL, M.S., Dean 52 Clement Ave., West Roxbury
Professor of Civil Engineering

JOSEPH ARTHUR COOLIDGE, S.B. 20 Martin St., Cambridge
Professor of Physics

ERVIN KENISON, S.B. 105 Mount Auburn St., Watertown
Professor of Descriptive Geometry

EZRA KEMPTON MAXFIELD, A.M. Ridgely Hall 41, Cambridge
Professor of English

WILLIAM LINCOLN SMITH, S.B. 4 Academy Lane, Concord
Professor of Electrical Engineering

GEORGE WRIGHT SWETT, S.B. 11 Henry Ave., Melrose Highlands
Professor of Mechanical Engineering

ROBERT SEATON WILLIAMS, Ph.D. 156 Magazine St., Cambridge
Professor of Analytical Chemistry

FRANK VOGEL, A.M. 98 Robinwood Ave., Jamaica Plain
Professor of German

MONROE AMES, S.B. 38 Pearl St., Medford
Assistant Professor of Civil Engineering

GEORGE FRANCIS ASHLEY 163 Summer St., Somerville
Assistant Professor of Engineering Drawing

GEORGE LEON ATKINS, M.E.E. Hotel Atlantic, Revere
Assistant Professor of Mechanical Engineering

Northeastern College

FACULTY OF THE SCHOOL

(Continued)

PEARL WHITEFIELD DURKEE, S.B. 505 Huntington Ave., Boston
Assistant Professor of Electrical Engineering

FRANK DAVIS LANE, B.S. 128 Huntington Ave., Boston
Assistant Professor of Mathematics

JOHN BUTLER PUGSLEY, A.B. 16 Williams St., Brookline
Assistant Professor of Physics

PERCY FRANCIS BENEDICT, S.B. 491 Belmont St., Belmont
Instructor in Civil Engineering

JESSE JENNINGS EAMES, S.B. Swampscott
Instructor in Mechanical Engineering

ALFRED JOHN FERRETTI, S.B. 92 Church St., Lynn
Instructor in Mechanical Engineering

GEORGE BLODGETT GEE, C.E. 24 Trapelo Rd., Belmont
Instructor in Civil Engineering

LEON FREDERIC GIRARD 206 Massachusetts Ave., Boston
Instructor in Mathematics and Physics

FRANK MARTIN GRACEY 23 Webster St., Somerville
Instructor in Descriptive Geometry

LEICESTER FORSYTH HAMILTON 64 Freeman St., Arlington
Instructor in Chemistry

AMOS GORDON MERRY, Captain, U. S. Army
1400 Broad St., Hartford, Conn.
Instructor in Military Tactics

JOHN JAMES SINNETT 19 Rock View St., Jamaica Plain
Instructor in Physical Training

Northeastern College

FACULTY OF THE SCHOOL

(Continued)

SAMUEL ABBOTT SMITH STRAHAN 12 Hemenway St., Boston
Instructor in Chemical Engineering

ALFRED JACKSON THOMPSON 93 Crost St., Malden
Instructor in Accounting

REGINALD GEORGE TROTTER, A.M. Claverly Hall, Cambridge
Instructor in War Issues

WALTER GORDON WHITMAN, S.B. School Street, Sharon
Instructor in Chemical Engineering

ABRAHAM ALBERT BECKER 298 Western Ave., Cambridge
Assistant in Chemistry

ARTHUR RAYMOND HAWES Sudbury
Assistant in Chemistry

ELMER HANLEY RICHARDSON 85 Green St., Reading
Assistant in Drawing

SHAW DEARBORN SARGENT 78 Westland Ave., Boston
Assistant in Electrical Engineering

ARTHUR EARLE SMITHIES 526 Columbus Ave., Boston
Assistant in English

Northeastern College

SPECIAL LECTURERS

MATTHEW C. BRUSH, S.B.

President, Boston Elevated Railway Company
"The Human Equation in Business"

JAMES E. COLE

Commissioner of Wires, City of Boston
"Wire Trouble and Accidents"

CHARLES R. GOW, S.B.

Charles R. Gow Co., Engineers and Contractors
"Foundations of Buildings and Structures"

GEORGE B. HAVEN, S.B.

Professor of Machine Design, Massachusetts Institute of Technology
"Aircraft Fabrics"

J. HENRY NEAL

Vice-President and General Auditor, Boston Elevated Railway
Company
"Engineering in its Relation to Finance"

THOMAS E. PENARD, S.B.

Engineer, Electrical Division, Edison Electric Illuminating Co.
of Boston
"High Potential Phenomena"

WILLIAM THOMPSON SEDGWICK, PH.D., SC.D.

Professor of Biology and Public Health, Massachusetts Institute of
Technology
"Public Health"

FRANKLIN H. WENTWORTH

Secretary-Treasurer, National Fire Protection Association
"The Significance of the Fire Waste"

WILLIAM ELGIN WICKENDEN, S.B.

Associate Professor of Electrical Engineering, Massachusetts
Institute of Technology
"Engineering as a Profession"

JOHN F. WING, A.B., PH.D.

Vice-President, New England Manufacturing Company
"Military Explosives"

CO-OPERATIVE SCHOOL OF ENGINEERING

GENERAL INFORMATION

Historical

In September, 1909, the Department of Education of the Boston Young Men's Christian Association began to offer Co-operative Engineering Courses in connection with the Evening Polytechnic School. At that time, the Co-operative Course students were employed by engineering firms on the one week period plan, one working one week while his alternate was going to school, and at the close of the week exchanging places so that the student who had been to school went to work. Conditions were such that the students attended both day and evening classes. Two years later, it was decided to establish an engineering school, to do work of college grade, based entirely on the part-time, or co-operative plan. Thus, in 1911, was started what is now the Co-operative School of Engineering of Northeastern College.

In the ten years that have elapsed since the inception of the idea, the School, which was started with no special educational requirements for entering students, and which had but little equipment and a registration of only eight pupils, has grown to be a recognized factor in the community, with rigid requirements of scholarship and character for entering students, thousands of dollars' worth of equipment, a highly trained and able faculty, and an enrollment of over three hundred and seventy-five students. It is enabling the young man of moderate financial ability to get a high-grade engineering training and at the same time not only defray his own expenses, but also become familiar with the actual practice of his profession.

Object of the School

Technical school instruction, depending on class-room work and laboratories, must always lack some of the vital characteristics of an actual manufacturing plant. One is carried on for educational purposes, while the other is operated for dividends. It is this latter fact that gives the Co-operative School idea one great advantage over the usual educational plan. In-

GENERAL INFORMATION

stead of training the student for several years for a line of work to which he may later find himself to be entirely unfitted, the Co-operative School at once puts the boy to work in a commercial plant. There he learns life in its vital issues, as well as the problem of getting along with men; thus early finding out whether he has made a wise, or unwise, choice of his life work. This training shows him the use and value of his school work, and finally gives him an unusual opportunity to acquire from actual experience that rare thing, *executive ability*, without which his life probably would be spent on the lower levels of industry.

The fundamental aim of this School is to give young men sound training in both the theoretical and practical principles upon which professional practice is based. Thus they are enabled to advance farther and more rapidly in their chosen work than they could expect to do without further education than that of a high-school course. The training is not in any sense that of a trade school, nor is it exactly that of our best scientific schools, but it stands between the two. The work done is that of a regular engineering school of high standards; only the essential subjects are taken, and these only so far as they will have a direct bearing on the life work of the student. In other words, it is a limited technical training of high grade. The fact that most of our instructors are graduates of, or instructors in, the Massachusetts Institute of Technology, will show the character of work being done.

At present there are four branches of engineering work being given. The end sought is to give to students who have already had a high-school preparation, or its equivalent, a good training in the fundamental sciences of Mathematics, Chemistry and Physics, and in the important applications of the principles of these sciences to the several branches of engineering. More stress is laid on the development of the ability to apply the acquired knowledge to new engineering problems, than to the memorizing of a multitude of details and very abstract theory, which while valuable cannot be gone into deeply in a course of this type.

The courses differ from those of many schools, in that a student is not permitted a wide range of subjects from which

CO-OPERATIVE SCHOOL OF ENGINEERING

to choose. It has been found that better results are obtained by prescribing the principal studies which the student is to pursue.

Plan of Operation of the School

To illustrate the plan of operation of the School, take the case of two men, "A" and "B," who desire to take our Mechanical Engineering Course. "A" is assigned to one of the plants of a firm that is co-operating with us. Here he is put to work, and spends two weeks working for the firm. Then "B," his alternate, who has spent the first two weeks in the School, takes "A's" place with the firm, and "A" puts in the next two weeks at school. Thus the work goes on, the two men exchanging places at the beginning of each two-week period. The studies pursued in the course have a direct practical bearing on the outside work, with the exception of a few courses. The courses given have been decided upon after conference between the co-operating employers and the school authorities, and are the result of the best ideas of both. The subjects are taught in a practical, not in an abstract or a theoretical way. Thus, in mathematics, instead of algebra, analytic geometry, and calculus taught as so many separate subjects, we have them correlated and taught as instruments for the solution of practical problems arising in engineering work. The aim throughout the course is to give it practical bearing, and yet have it complete and thorough in all the needed essentials.

EQUIPMENT OF THE SCHOOL

ENGINEERING EQUIPMENT

The school is now housed in the new building of the Association, and has very exceptionally equipped quarters for carrying on the work of the Engineering Courses.

Mechanical Laboratories

Through the courtesy of the Massachusetts Institute of Technology officials, and also those of the Franklin Union, and Wentworth Institute, we are able to avail ourselves of the unexcelled Engineering Laboratories of those Institutions for instruction purposes in the laboratory courses of the Co-operative School.

In addition to the foregoing facilities, we have several engines of our own for use for instruction, as well as the most modern equipment for gas and fuel analysis.

Our own steam engineering plant is completely equipped with meters, scales, indicators, and all the necessary accessory equipment for making complete boiler tests, and determining the efficiencies of the various appliances used in generating power, heat, and light for our new building. This places at the disposal of our classes a perfectly equipped, up-to-date, engineering department, and gives them the means of carrying on boiler tests, determining the efficiencies of various fuels and oils, taking indicator diagrams, determining the efficiency of modern reciprocating engines and turbines when direct connected to generators, as well as renders them familiar with all the various auxiliary appliances of such a plant, as condensers, pumps, air compressors, etc. The students also have the use of the equipment of our Automobile School, thus having opportunity to study the most advanced ideas in gasoline engine practice.

Mechanic Arts Laboratories

There are at present two laboratories, one for metal work and the other for woodworking and pattern work, which are available for the use of our students.

The metal working laboratory is well equipped, and affords the student an opportunity for work with various machines, as lathes, shapers, drill presses and milling machines. There

CO-OPERATIVE SCHOOL OF ENGINEERING

are also a gas forge and a brazing furnace, together with all the required equipment for bench work instruction.

The woodworking laboratory has a power band saw, lathes, circular saw, buzz planer, and all the necessary equipment for woodworking and pattern work.

In addition to the foregoing, a small but completely equipped shop for the construction and repair of apparatus and for the use of students in connection with their thesis work has been installed. This shop is equipped with a metal and wood-working lathe, grinder, and all the necessary wood and metal-working tools. There is also a very complete set of cabinet-worker's tools for use in woodworking.

Field Instruments (Civil Engineering Department)

For work in the field the Civil Engineering Department possesses various surveying instruments, representing the principal makes and types of instruments in general use. The equipment includes transits, levels, compasses, plane table outfits, Locke hand levels, flag poles, leveling rods, stadia rods, engineers' and surveyors' chains, steel and cloth tapes, and other accessories. For higher surveying there is an aneroid barometer for barometric leveling, and a sextant reading to ten seconds for hydrographic surveying. The transits are equipped with neutral glasses and reflectors for astronomical observations.

There have recently been added to the equipment a Keuffel & Esser 6 $\frac{3}{4}$ " transit, a Buff & Buff 4 $\frac{3}{4}$ " Mountain Transit, a Keuffel & Esser 18" Wye level, two surveyors' compasses, and a Gurley Electric Current meter for hydraulic measurements, as well as all the miscellaneous apparatus necessary to equip the extra parties that the new instruments would accommodate.

The extent of the equipment and scope of the field work itself are designed to train the student's judgment as to the relative merits of the various types of field instruments.

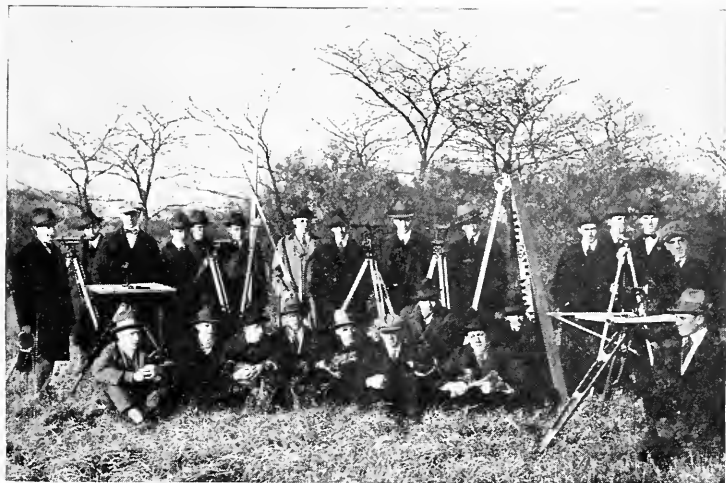
Design and Drafting Rooms

The School possesses large, light, and well-equipped drawing rooms for the carrying on of the designing and drafting which form so important a part of civil engineering work. These

Civil Engineering Students



Locating Walls of a Building
Aspinwall and Lincoln, Civil Engineers

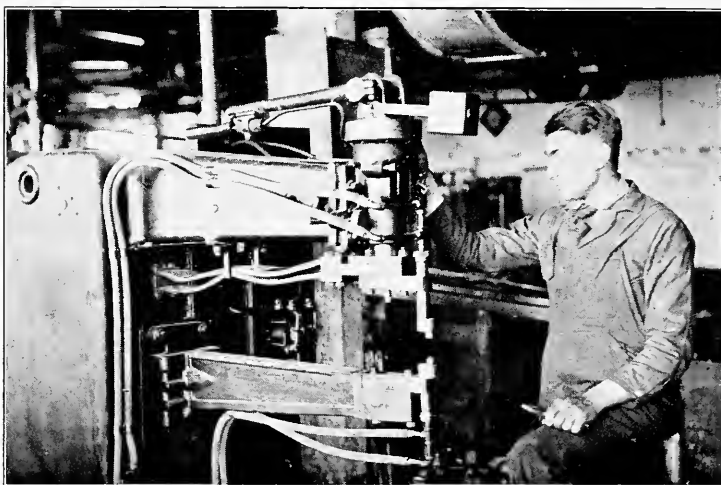


Group of Civil Engineering Students

Electrical Engineering Students



Winding Armatures
Armature Shop—Boston Elevated Railway Co.



Operating a Spot Welder
United Shoe Machinery Company—Beverly

EQUIPMENT OF THE SCHOOL

rooms are supplied with lockers containing the drawing supplies, and files containing blue prints and photographs of structures that represent the best practice. Many of the prints and photographs are of structures erected in and about Boston.

Electrical Measurements Laboratory

This is equipped with apparatus fundamentally planned for teaching the principles of measurement, rather than for the precise determination of quantitative results. Nevertheless it is necessary for the proper performance of work in the other laboratory courses that a certain amount of careful quantitative work should be done, and the equipment is being steadily increased and developed with both ends held in view.

Apparatus is available for instruction in the following: Resistance by Ohm's law, substitution and direct reflection, voltmeter methods for high resistance, insulation resistance, specific resistance, slide wire bridge, Wheatstone bridge, current by electrolysis, electrostatic capacity, inductance, Poggen-dorf's method of E M F comparison, etc., under the first head and for work under the second head there is considerable apparatus among which may be mentioned, a conductivity bridge, a Laboratory standard Wheatstone bridge, a Kelvin low resistance bridge, a Leeds Northrup potentiometer with two standard Weston cells, volt box and steady source of high voltage for voltmeter calibration, numerous standard shunts and a 600 ampere hour storage battery for ammeter calibration, a commutator and leads for use with the Cary-Foster method and a chemical balance.

The Instrument Room is supplied with four G.E. 300-150-15 DC voltmeters, and four double range Weston's, four single range ammeters, six millivoltmeters with twelve interchangeable shunts of various ranges up to 100 amperes, all of high grade, together with numerous similar instruments of cheaper quality for lower-class work. For alternating current testing there are:

Three General Electric type P-3 single phase wattmeters with double voltage and current ranges arranged for Y connection; two Polyphase wattmeters of similar type and ranges, one of similar type specially constructed for measurement of

CO-OPERATIVE SCHOOL OF ENGINEERING

core loss, three integrating wattmeters and one rotating standard.

Three 300-volt, three 150-volt and three 50-volt voltmeters.

Three 50-ampere, three 25-ampere, three 15-ampere, three 10-ampere, three 5-ampere and three 1-ampere ammeters, these all being in groups of three for polyphase work; and a Laboratory standard AC voltmeter with extension coils.

There is also a considerable amount of auxiliary apparatus such as frequency indicators, synchrosopes, and power factor meters.

Electrical Engineering Laboratory

This is equipped with numerous machines of different types, the size and voltage ratings being selected to reduce as much as possible the risk from large voltage and power apparatus, while at the same time availing the student of apparatus of commercial sizes such that the various quantities it is desired to measure will be of reasonable dimensions.

Small machines are used mostly for this reason, and also because the students in their Engineering Practice come in contact with the large sized and varied machinery of modern powerhouses and electrical plants continually.

Among the machines of this department are a pair of specially made matched machines, constructed to operate as single, two, or three phase generators, or motors, as well as synchronous converters, or double current generators. On the direct-current side, these machines will operate as shunt, series, or compound generators, either two or three wire, or as shunt, series, or compound motors. There is a 15 H. P. Westinghouse compound motor, a 3 K. W. compound generator, a 1 K. W. series generator, a 5 H. P. General Electric interpole motor, a 5 H. P. General Electric series motor, a 4 H. P. shunt motor, two 3 H. P. shunt motors, and a 2 H. P. shunt motor; also a $7\frac{1}{2}$ kv-a. special General Electric alternator driven by a 10 H. P. General Electric interpole motor, and a 5 kv-a. Holtzer Cabot alternator driven by a 10 H. P. Fort Wayne shunt motor. This last machine has two special rotors, permitting its use as a squirrel-cage or phase-wound, induction motor. In addition, there is a 5 K. W. Holtzer-Cabot three-phase synchronous convertor, a 5 H. P. General

EQUIPMENT OF THE SCHOOL

Electric induction motor, which can be operated two or three phase, a 15 kv-a. three phase alternator, giving practically a pure sine wave, and three General Electric transformers, each of 3 kv-a. capacity. During the past year there has been added three special 1 K. W. single-phase transformers, with leads arranged to give various types of transformer primary and secondary connections, also a set of reactances for making up three phase inductive loads with extremely low power factor and a similar set of condensers.

There is also available for advanced instruction, in co-operation with the Mechanical Engineering Department, the four three-wire generators in the main generating plant. Three of these generators are driven by Ridgeway reciprocating engines and one by a Westinghouse-Parson turbine.

Physics Laboratories

The Physics department has been very completely equipped with all necessary apparatus for the experimental work that is required of the students, as well as that required for lecture demonstration. There is a large laboratory together with a lecture room devoted entirely to Physics. Among other things have been added verniers, levels, spherometers, calorimeters, thermometers, pyrometers, a spectroscope, a microscope, a spectrometer, balances, standard gram weight, lecture table galvanometer, optical disk with all accessories, lenses, photometer, a full set of Weather Bureau apparatus, including a barograph, thermograph, hygrometer, barometer, maximum and minimum thermometers, etc. These, in addition to the equipment already owned, give a wide range to the experimental work that can be done.

Chemical Laboratories

The School has three laboratories completely equipped in all respects for carrying on all lines of chemical work, from that of a high school to that of most advanced college grade. They have accommodations for over one hundred and fifty students, and are suitably furnished with all the necessary appliances for chemical work. Some of these are: hoods, drying closets, a still, steam and hot water baths, electrolytic

CO-OPERATIVE SCHOOL OF ENGINEERING

circuits, vacuum and pressure apparatus, balances, combustion furnaces, and complete sets of apparatus for the sampling and analysis of flue gases and fuels. There are also testing machines for oils, viscosimeters, and different sorts of flash point apparatus. A chemical museum is connected with this department where are kept specimens for purposes of illustration.

Libraries

The School shares the privileges of the steadily growing Y.M.C.A. Libraries in the Main Building. It also supports a professional library distributed among the various departments. In addition to this, it subscribes to current periodicals on engineering and scientific subjects for the exclusive use of students. All members of the School are entitled to take books from the Boston Public Library, and this offers a very unusual opportunity to our non-resident students.

Department of Physical Training

Our new gymnasium with all the latest modern equipment gives ample accommodation for all students. There is a running track on the grounds adjoining, together with tennis and hand ball courts; also a large natatorium where swimming is taught by competent instructors. In connection with this department there are also six excellent bowling alleys, which may be used by the students upon the payment of a nominal fee.

ENGINEERING PRACTICE

ENGINEERING PRACTICE

Correlation of Practical and Theoretical Work

The engineering practice of the student is progressive and is as carefully planned as the work done at the School. The employers who co-operate with us generally agree, where practicable, to employ the students in all the different departments of their establishments during their periods of engineering practice. This training is just as complete as the school work, and is just as thorough. Where possible, the course of the learner is from the handling of the raw material to the shipment of the finished product. This practical training includes the use of the machines, as well as the executive duties of the plant, so that at the end of his course the graduate may not only know how to do things, but also why they are done in certain ways; and we hope he may be of value in improving methods of work.

Number of Students

The number of positions at our disposal in any one branch of engineering is necessarily limited, and naturally the number of students who can work part time in that line is also limited. In consequence of this, those students who apply first will get first consideration in the matter of positions. Those who wish to enter are urged to present their applications as early as possible.

The applicants who apply for admission to the School too late to be assigned to practical work, may attend the School every period, or every alternate period, as they may wish, and will be assigned to practical work as soon as an opening occurs.

Attitude of Co-operating Firms

The favorable attitude of the co-operating concerns toward our plan is shown by their retention of the same students from year to year, even after graduation, and also in the fact that whenever any vacancies occur which can be filled by our men, they make immediate application for additional students to fill them.

CO-OPERATIVE SCHOOL OF ENGINEERING

Co-operating Firms

AMERICAN DYEWOOD Co.
AMERICAN GLUE Co., Peabody.
AMERICAN STEAM GAUGE AND VALVE Co.
ANDERSON BROTHERS, Chemists.
APPLETON, THOMAS A., Civil Engineer, Salem.
ASPINWALL AND LINCOLN, Civil Engineers.
BARNES, ROWLAND H., Civil Engineer.
BAY STATE STREET RAILWAY COMPANY.
BEAL, H. F., City Engineer, Waltham.
B. F. STURTEVANT Co., Hyde Park.
BIO-CHEMICAL LABORATORY.
BOSTON ELEVATED RAILWAY Co.
BOSTON & ALBANY RAILROAD Co.
BOSTON & MAINE RAILROAD Co.
BOSTON CONSOLIDATED GAS Co.
BRYANT, H. F., Civil Engineer.
CARR, J. LEWIS, Civil Engineer.
CONDIT ELECTRICAL MANUFACTURING Co.
CROFOOT GEAR WORKS.
DENNISON MANUFACTURING Co., Framingham.
EDISON ELECTRIC ILLUMINATING Co.
EVANS, R., Essex County Engineer, Salem.
EVATT CONSTRUCTION Co.
FOXBORO INSTRUMENT Co.
FRED B. SAUNDERS Co., Engineers, Framingham.
GENERAL ELECTRIC Co., Lynn.
GEORGE E. FULLER CONSTRUCTION Co.
GLENLYON DYE WORKS, Saylesville, R. I.
H. G. BUTT MANUFACTURING Co.
HUNT-SPILLER CORP., Iron Founders.
J. H. LONG MACHINE Co.
LEVER BROTHERS Co., Soap Manufacturers.
L. E. KNOTT APPARATUS Co.
LUSTRON CHEMICAL Co.
MERRIMAC CHEMICAL Co.
MILES, GEORGE W., Chemist.
NEW ENGLAND STRUCTURAL Co.
NEW YORK, NEW HAVEN AND HARTFORD RAILROAD Co.
NORTON GRINDING Co., Worcester.
POTTER, HERBERT S., Electrical Contractor.
PRESCOTT, SAMUEL C., Sanitary Chemist.
PROVIDENCE DYEING, BLEACHING AND CALENDERING Co.
PUNCHARD, WILLIAM H., Landscape Architect.
RUGGLES AND KLINGEMAN Co., Salem.
SAMUEL CABOT, INC., Manufacturing Chemists.
SANBORN COMPANY, Instrument Makers.
SHERRY, FRANK E., Civil Engineer.
SIMPLEX ELECTRIC HEATING Co.
SIMPLEX WIRE AND CABLE Co.
SPRAY ENGINEERING COMPANY.
TILESTON & HOLLINGSWORTH PAPER Co.
TRIMONT MANUFACTURING COMPANY.
UNITED SHOE MACHINERY Co., Beverly.

ENGINEERING PRACTICE

VENNARD, WILLIAM L., City Engineer, Lynn.
WARREN BROTHERS Co., Paving Materials.
WERBY CHEMICAL LABORATORIES.
WHIDDEN-BEEKMAN Co., Construction Engineers.
WHITMAN & HOWARD, Civil Engineers.

Thus far we have secured new positions for our students as the growth of the School has demanded. Nevertheless, to be at all sure of work in his chosen branch of engineering, an applicant should file his application early.

Sometimes, students may secure their own positions with firms, in which case an alternate can usually be furnished by the School, if desired. Such individual arrangements are entirely acceptable to the School, and may be made by any applicant, subject to the approval of the Dean.

Schedules of Practical Work

Below are typical schedules of engineering practice that have been prepared for our students by some of the companies which are giving them employment. These schedules are being revised to conform to the slightly revised method of operating the School:

Boston Elevated Railway Co.

FIRST YEAR.	Pit Work in Carhouse,	6 months
	Armature Room,	6 months
SECOND YEAR.	Machine Shop Work,	12 months
THIRD YEAR.	Mechanical Drafting Room,	6 months
	Pattern Shop and Foundry,	6 months
FOURTH YEAR.	Line Department,	6 months

Boston & Maine Railroad Co.

FIRST YEAR.	Electrical Engineer's Department,	6 months
	Air Brake Shops,	6 months
	Erecting Work,	6 months
SECOND YEAR.	Erecting Work,	6 months
	Machine Shop,	6 months
THIRD YEAR.	Machine Shop,	6 months
	Mechanical Drafting Room,	6 months
FOURTH YEAR.	Engine House Repairs,	6 months
	Drafting Room and Testing Work,	6 months

Boston Consolidated Gas Co.

FIRST YEAR.	Data Takers,	9 months
	Office,	3 months
SECOND YEAR.	Pipe Fitter's Helpers,	3 months
	Pump Man's Helpers,	3 months
	Blowers and Exhausters,	3 months
	Laboratory,	3 months

CO-OPERATIVE SCHOOL OF ENGINEERING

THIRD YEAR.	Boiler Room,	3 months
	Generator House,	3 months
	Steam Fitters,	3 months
	Machine Shop,	3 months
FOURTH YEAR.	Assistant Engineers,	3 months
	Laboratory,	6 months
	Distribution Department,	3 months

Simplex Wire & Cable Co.

FIRST YEAR.	Insulating Department,	6 months
	Braiding Department,	6 months
SECOND YEAR.	Cable Shop,	6 months
	Twisting Department,	6 months
THIRD YEAR.	Machine Shop Construction Gang,	6 months
	Electrical Construction Gang,	6 months
FOURTH YEAR.	Testing Room,	12 months

Simplex Electric Heating Co.

FIRST YEAR.	Machine Department,	12 months
SECOND YEAR.	Grinding Department,	1 month
	Stock Department,	4 months
	Winding Department,	½ month
	Enameling Department,	½ month
	Assembling Department,	6 months
THIRD YEAR.	Testing Department, First Division,	6 months
	Testing Department, Second Division,	6 months
FOURTH YEAR.	Shipping Department, approximately,	2 months
	Drafting Department, approximately,	4 months
	General Shop experience,	6 months

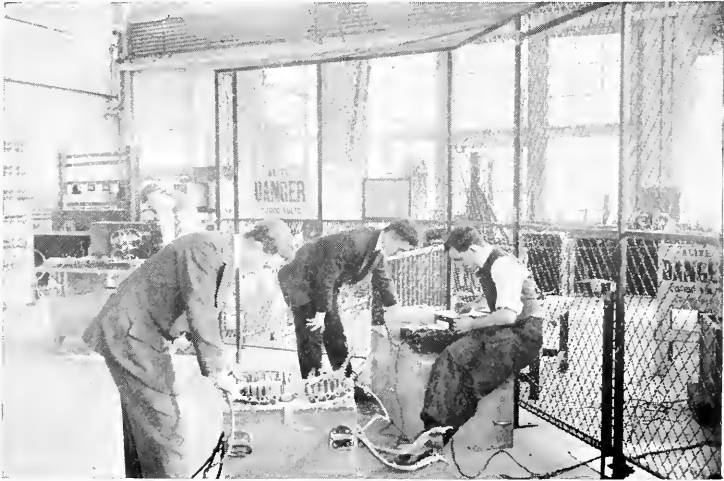
Condit Electrical Manufacturing Co.

FIRST YEAR.	Shipping or Receiving,	4 months
	Cost and Estimating,	4 months
	Stock Room,	4 months
SECOND YEAR.	Machine Department,	4 months
	Direct-Current Assembly,	4 months
	Alternating-Current Assembly,	4 months
THIRD YEAR.	Inspecting and Testing Department,	6 months
	Experimental Department,	3 months
	Drafting Department,	3 months
FOURTH YEAR.	Switchboard Department,	6 months
	Engineering Department,	6 months

The Dennison Manufacturing Co.

FIRST YEAR.	Carpenter's Helper,	4 months
	Pattern Maker's Helper,	3 months
	Elevator, Fire Door, Shafting, etc.,	2 months
	Helpers in Millwright's and Electrician's	
	Gangs,	3 months
SECOND YEAR.	Machine Shop Stock Room,	1 month
	Machine Shop,	9 months
	Grinding Room,	2 months

Students Engaged in Engineering Practice

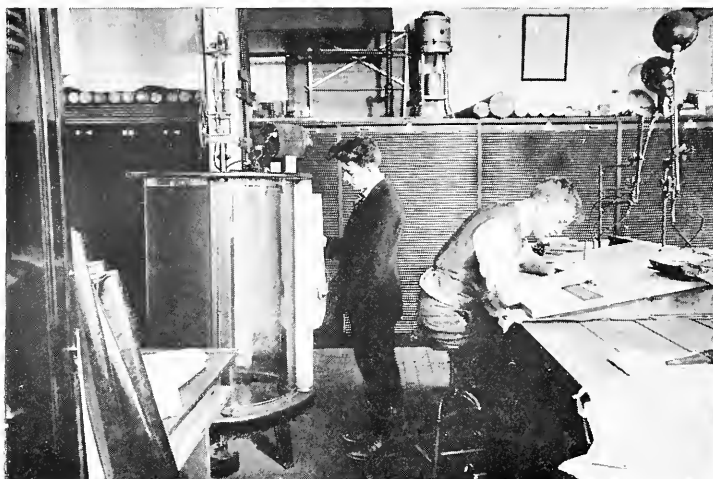


Making a High Tension Test
Edison Electric Illuminating Company

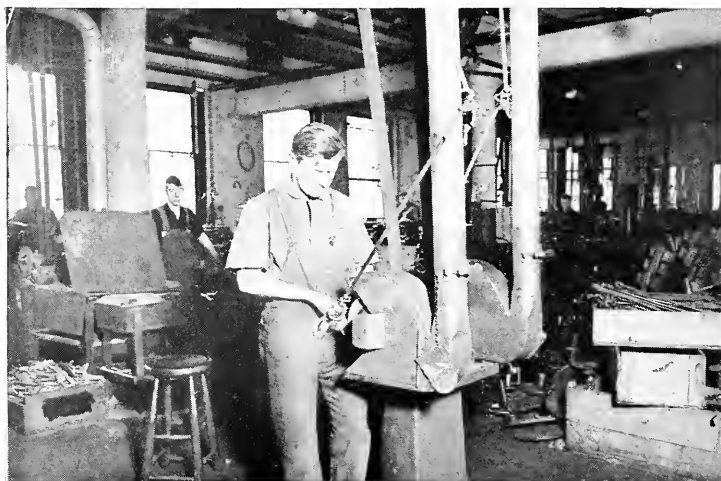


Drafting
Designing Engineer's Office—B. & A. Railroad

Students Engaged in Engineering Practice



Drafting and Blue-Printing
American Steam Gauge and Valve Company



Grinding Castings
Machine Shop—Boston Elevated Railway Co.

ENGINEERING PRACTICE

THIRD YEAR.	Power Plant Work (the time to be put in	
	at the option of the Company),	3 months
	Accident Prevention Work,	4 months
	Experimental Work (machine work),	3 months
FOURTH YEAR.	Filing Plans, Blue Printing, Tracing, etc.,	2 months
	Tracing and general work,	2 months
	Detailing and General Drafting,	10 months

Boston & Albany Railroad Co.

FIRST YEAR.	Work in Field Party,	12 months
SECOND YEAR.	Work in Drafting Room,	12 months
THIRD YEAR.	Masonry Inspection and General Railroad	
	Work,	6 months
	Railroad Accounting,	6 months
FOURTH YEAR.	Railroad Accounting,	6 months
	Timekeeping and Unit Costs,	6 months

The above programmes give a general idea of what some of the students do in their practical work, and the courses of study pursued at the School show what they do along academic lines. It will be seen that there is the greatest possible degree of correlation between theory and practice in the work they take up. The men under whose supervision the students have been in their outside work are practically unanimous in approval of our plan, and speak highly of the enthusiasm, earnestness and intelligence the students have shown in the performance of their duties.

Earnings

For the practical work the student does he is paid a certain amount per hour or per week at the start, and a definite increase per hour or week after completing fixed periods of service. The sum earned is more than enough to pay the tuition and the necessary expenses of schooling, but does not cover the cost of living.

In many cases the boys are paid at a higher rate than is called for by their schedule of pay, but this is due to the courtesy of the company that gives them employment, and is not in any way to be expected as a regular thing. The co-operating firms may make any salary schedule they desire, so long as it does not fall below that originally agreed upon.

Since there are about thirty weeks of work per year, the earnings will be from two hundred and forty dollars upwards.

CO-OPERATIVE SCHOOL OF ENGINEERING

Frequently a student is able to earn much more than the regular rate, owing to his getting extra pay for overtime work.

A census of our students who were working in January, 1919, gave the following data in regard to earnings:

Minimum weekly wage,	\$8.00
Maximum weekly wage,	20.00
*Minimum earnings for year 1918,	240.00
*Maximum earnings for year 1918,	600.00

*Based on a total working period of thirty weeks.

Expenses

Since the earnings of the students average from \$240 to \$600 a year from their practical work, while expense for tuition, books, drafting supplies, etc., and membership in the Y.M.C.A. is not over \$130 to \$140, there is a considerable balance for incidentals.

While the School supplies all books, drawing instruments, slide rules, etc., the supply department has found it impracticable to furnish the students with notebooks, paper, drawing ink, pencils, etc. In consequence, the student will have a slight expense, of probably less than five dollars per year, for such materials.

Relation of School to High Schools

This School is peculiarly adapted to the high school graduate who although financially unable to continue his studies further still has the ambition and ability to get ahead if given the opportunity. Thus students who can still live at home, after being graduated from high school, are able to fit themselves for something better than the positions filled by untrained men.

This year the School has a student body made up of graduates of the following schools:

Abington High School	Bingham (Me.) High School
Amherst High School	Boothbay Harbor (Me.) High School
Ashland High School	Boston College High School
Assumption High School	Boston English High School
Athol High School	Boston Central Evening High School
Ayer High School	Boston High School of Commerce
Barnstable High School	Brewster Free Academy (N. H.)
Belfast (Me.) High School	Bridgewater High School
Belmont High School	Brighton High School
Berkeley Preparatory School	
Beverly High School	

RELATION OF SCHOOL TO HIGH SCHOOL

Brockton High School	Nashua (N. H.) High School
Brookline High School	Natick High School
Cambridge High and Latin High School	New Boston (N. H.) High School
Cambridge Ringe Technical High School	New Britain (Conn.) High School
Chelsea High School	Newburyport High School
Chester High School	Newton High School
Chester (Conn.) High School	Newton Technical High School
Chicopee High School	Newton Vocational School
Clinton High School	Nicolet Academy (Canada)
Concord High School	Northbridge High School
Concord (N. H.) High School	Norway (Me.) High School
Dalton High School	Norwood High School
Danvers High School	Nowell High School
Dedham High School	Phillips Andover Academy
Dennis High School	Plainville High School
Dexter High School	Plymouth High School
Dorchester High School	Provincetown High School
Douglas High School	Quincy High School
East Bridgewater High School	Reading High School
Eastport (Me.) High School	Reed's Ferry (N.H.) High School
Elizabeth Lowell High School	Revere High School
Everett High School	Rochester (N. H.) High School
Fairfield (Me.) High School	Rochester (N. Y.) High School
Fairhaven High School	Rockland High School
Fall River High School	Rockland (Me.) High School
Falmouth High School	Roxbury Commercial High School
Fitchburg High School	Rutland (Vt.) High School
Foxboro High School	Sacred Heart (R. I.) High School
Framingham High School	Salem High School
Franklin High School	Sanderson Academy
Fryeburg (Me.) High School	Saugus High School
Gardiner (Me.) High School	Scituate High School
Gloucester High School	Sharon High School
Goddard Seminary (N. Y.)	Somerville High School
Gorham (Me.) High School	South Boston High School
Groveland High School	South Portland (Me.) High School
Hardwick High School	St. John's Military Academy
Harvard High School	Stone Preparatory School
Harwich High School	Stoughton High School
Hingham High School	Sudbury High School
Holbrook High School	Turina University (Italy)
Holliston High School	Wakefield High School
Huntington Preparatory School	Waltham High School
Killingly (Conn.) High School	Watertown High School
Kingston High School	Wellesley High School
Malden High School	Westbrook (Me.) High School
Marlboro High School	Weymouth High School
Marblehead High School	Wilmington High School
Marshfield High School	Windham High School
Mechanic Arts High School	Winthrop High School
Medford High School	Woburn High School
Medway High School	Woodstock (Conn.) Academy
Middleboro High School	Woodsville (N. H.) High School
Milford High School	Worcester Academy
Montpelier (Vt.) High School	Worcester Boys' Trade School
	Worcester Classical High School

CO-OPERATIVE SCHOOL OF ENGINEERING

Four-Year Courses

Regular four-year courses, leading to a diploma, are offered in the following branches of engineering:

- I. Civil Engineering.
- II. Mechanical Engineering.
- III. Electrical Engineering.
- IV. Chemical Engineering.

Descriptions of these courses and schedules showing the subjects of instruction included will be found on succeeding pages.

Three-Year Course

It has been found possible for students to attend school every week and to complete the course in three years. To do this, however, the student must have a good high-school education and must omit the practical work in connection with the course except during his third year at the School.

Special permission to take a three-year course must be granted by the Faculty before a student will be permitted to enroll for such a course.

Students completing the course in three years will be required to pay the full tuition of the four-year course; namely, five hundred (500) dollars, before being awarded a diploma.

REQUIREMENTS FOR ADMISSION

REQUIREMENTS FOR ADMISSION

General Statement

In general, the preparation necessary to enable an applicant to pursue successfully one of the regular courses in the Co-operative School corresponds to the four-year course of study offered by high schools of the better grade. The requirements of age and scholarship are regarded as the minimum in all ordinary cases, and only exceptional circumstances will justify any relaxation. Parents and guardians are advised that it is generally for the ultimate advantage of the student not to enter under the age of sixteen years. Every applicant must furnish references as to his character and ability, and must show cause why he may reasonably be expected to make a success of his course, both in the School and in Engineering Practice. He must be willing and able to work hard, both mentally and physically.

Admission to the First Year

Applicants for admission as regular students to the Co-operative School of Engineering are required to present evidence of graduation from accredited four-year high schools, or the equivalent, and to have included in their courses of study Algebra as far as Quadratics and Plane Geometry. The completion of fifteen units of preparatory subjects satisfactory to the Committee on Admission is considered equivalent qualification. In special cases, however, students presenting thirteen units which are satisfactory to the Committee on Admission may be permitted to enter with two units conditioned, provided these conditioned units are made up, as prescribed by the Committee on Admission, in Northeastern Preparatory School (evening school) or some other good preparatory school.

Students whose high school courses have not included the required Algebra and Plane Geometry must take special entrance examinations, the dates of which are scheduled elsewhere. Certificates of entrance examinations passed for admission to colleges, or technical schools of good standing, may

CO-OPERATIVE SCHOOL OF ENGINEERING

be accepted in lieu of entrance examinations. It is assumed that applicants for admission have had a course in high school Physics. Those who have not taken such a course in their preparatory work will be required to take a course in laboratory experiments at the School in addition to the regular first year schedule.

In exceptional cases a student who is not a high school graduate may be allowed to enter as a special student, but only after his case has been passed on favorably by the Committee on Admission and the Dean. Every applicant is urged to remain in high school until he is graduated even though he could qualify for entrance before receiving his high school diploma.

A student obtaining a low rating on his entrance examinations, or who may not be eligible to assignment to Engineering Practice for other reasons, may by special permission be allowed to attend school either every period or every alternate period. Such students may be required to take a special intensive course in mathematics given in the first part of the first year, in addition to the regular first year work. When a student's record justifies such a procedure, he may be assigned to Engineering Practice.

Application for Admission

Each applicant for admission to the School is required to fill out an application blank, whereon he states his previous education, as well as the names of persons to whom reference may be made in regard to his character and previous training.

The last page of this catalog is in the form of an application blank. It should be filled out in ink and forwarded with the required five dollar deposit, to Carl S. Ell, Dean, 316 Huntington Avenue, Boston, Mass.

Upon receipt of the application blank, properly filled out, together with the required deposit, the School at once looks up the applicant's references and high school records. When replies have been received to the various inquiries instituted, the applicant is at once advised as to his eligibility for admission to the School. All applicants must meet the Dean for a personal interview before being finally accepted by the School.

REQUIREMENTS FOR ADMISSION

First Tuition Payment and Gymnasium Fee

Should a student wish to be assigned to a position with a co-operating firm before the regular opening of School, he is required to fill out a registration card and also an application for membership in the Association. The first payment of tuition must be paid before he will be assigned to any position at Engineering Practice.

Before any student shall be allowed to attend classes, or be given supplies, he shall have made a total payment of sixty (60) dollars. This is in addition to the application fee of five (5) dollars and the gymnasium fee of two dollars and fifty cents and may be paid at any time before school opens.

Make all checks and money orders payable to the Bursar, Northeastern College.

Birth and Educational Certificates

The passage of the recent law, by the Legislature, in regard to the hours and conditions of labor by minors, makes it necessary that all students under twenty-one years of age shall obtain Educational Certificates before they can be accepted by co-operating firms. For those students who plan to take the practical work, and who live outside of Boston, it will save time and trouble to bring a Certificate of Birth, or an Educational Certificate, with them on coming to Boston. The Educational Certificates are obtained free, upon request, from the Superintendent of Schools in the city, or town, where the student lives, if he lives in Massachusetts. For students living in other states a Certificate of Birth, or its equivalent, is all that will be necessary.

Entrance Examinations in Boston

Examinations for admission to the first year class will be held at 316 Huntington Avenue on June 12 and on September 4, 1919.

Students are advised to attend the June examinations, if possible, in order that any deficiencies then existing may be made up in September, before entrance.

CO-OPERATIVE SCHOOL OF ENGINEERING

Subjects for Examination

Applicants who have not passed Algebra to Quadratics and Plane Geometry satisfactorily in their courses of study in high school are required to pass entrance examinations in these subjects.

The detailed requirements in these subjects are as follows:

Algebra

The four fundamental operations for rational algebraic expressions; factoring, determination of highest common factor and lowest common multiple by factoring; fractions, including complex fractions; ratio and proportion; linear equations, both numerical and literal, containing one, or more, unknown quantities; problems depending on linear equations; radicals, including the extraction of the square root of polynomials and numbers; exponents, including the fractional and negative.

Plane Geometry

The usual theorems and constructions of good text-books, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas, regular polygons and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the mensuration of lines and plane surfaces.

Copies of Former Entrance Examinations

By writing the School, prospective applicants may receive copies of former entrance examinations. These copies are available for distribution and may be obtained at any time.

Order of Examinations

Thursday, June 12, 1919

10.00 a.m. to 12.00 m., Algebra

1.00 p.m. to 3.00 p.m., Plane Geometry

Thursday, September 4, 1919

10.00 a.m. to 12.00 m., Algebra

1.00 p.m. to 3.00 p.m., Plane Geometry

No fees are to be paid at the time of the examination.

DETAILED INFORMATION

Probation Period

When, for any reason, it is deemed advisable, the School reserves the right to place any entering student upon a period of probation, extending from one to three months, before placing him at practical work. Whether he shall be placed at work at the end of this time or not will be determined by the character of the work that he has accomplished during this probationary period.

SCHOOL INFORMATION IN DETAIL

Location

The buildings are located at 316 Huntington Avenue, just beyond Massachusetts Avenue, and are within easy access to the various railroad stations and the business and residential sections.

Residence

It has been found to be much more satisfactory for the student to live within easy access of Boston, than to live out twenty-five or thirty miles. The saving of time and effort more than offset any increased expense, and it is recommended that, where possible, arrangements be made to this end. Such local residence also enables the student to have a wider range of positions to choose from, since he can readily report for work at 7 a.m., if necessary, which is impossible for those students living at a distance.

Where students live in towns, or cities, twenty-five or thirty miles from Boston, it is often possible to arrange for them to work in or near their home towns, during the periods of practical work, by getting some local concern to furnish them with suitable employment.

For those students who will not be living at home, there are excellent accommodations, at very moderate rates, in the dormitories in our new building. These rooms may be had separately, or in groups with a common reception room, and the price varies from \$2.00 per week, upwards. Since board

CO-OPERATIVE SCHOOL OF ENGINEERING

costs from \$4.00 to \$6.00 a week, a student could get room and board for from \$7.00 to \$8.00 a week.

The School officials have no authority in the matter of dormitory assignments. Students should write the House Secretary for rooms in the dormitories.

School Year

The term begins September 8, 1919, and on succeeding years the school year will commence on the second Monday in September. The school exercises are suspended on legal holidays and for two weeks at Christmas. The School year for 1919-1920 closes on the twenty-sixth of June.

Attendance

Students are expected to attend all exercises in the subjects they are studying, unless excused by the Dean. With the exception of one hour in the middle of the day, exercises are held, and students are, in general, expected to devote themselves to the work of the School between 9 a.m. and 5 p.m. on every week day, except Saturday. Saturday classes are held only between 9 a.m. and 12 noon.

Tuition Fees

A fee of five (5) dollars as an application fee is to be paid when the application is filed. This fee is non-returnable, if the applicant is accepted. If he is rejected, one-half the deposit will be returned.

The tuition fee is \$125 per year, and must be paid by entering students as follows: Sixty dollars at beginning of fall term; thirty-five dollars December 1; thirty dollars March 1.

Failure to make the required payments on time renders the student liable to be barred from his classes until the matter has been adjusted with the Bursar.

This tuition fee includes membership in the Association, as well as the use of all books, drawing instruments, etc., which are required in the school work.

DETAILED INFORMATION

Special Tuition Fee for Three-Year Course

Students completing one of the four-year courses in three years will be required to pay the full tuition of the four-year course, namely, five hundred (500) dollars, before being awarded a diploma. The extra tuition shall be added to the regular tuition, as follows: First year, fifty dollars; second year, fifty dollars; third year, twenty-five dollars. Excess payments over the year's tuition shall be paid in installments with the regular tuition payments, as follows: First and Second years, twenty-five dollars at the beginning of the fall term, and twenty-five dollars on or before December first; Third year, twenty-five dollars at the beginning of the fall term.

Laboratory Fee and Breakage Deposit

All students taking Chemical Laboratory work are charged a nominal fee of five dollars per year. This fee is non-returnable after a student has enrolled and been assigned his desk in the laboratory. Students taking Chemical Laboratory work are also required to make a deposit of \$5 at the beginning of each year from which deductions are made for breakage and destruction of apparatus in the Laboratory and any remaining portion is returned to the student at the end of the school year. In case the charge for such breakage or destruction of apparatus is more than \$5 the student is charged this additional amount.

Payments

All payments should be made to Galen D. Light, Bursar.

All checks should be made payable to The Bursar, Northeastern College.

Refunds

Refunds will be granted in accordance with the regular rules of Northeastern College. In computing refunds, students shall be charged at the rate of seven and one-half dollars per week for each week of school attendance, and in addition to this shall be charged an extra twenty dollars over and above

CO-OPERATIVE SCHOOL OF ENGINEERING

this weekly rate. Refunds shall be computed from the day on which the School receives formal notice of student's intentions to leave, at which time also all his supplies shall be returned, or paid for. No application for refunds will be considered until the student's supplies have all been returned, or paid for.

Books and Supplies

The student is furnished with all books, drawing instruments, slide rules, and general supplies required for his work. This material is loaned to him during the school year, and must be returned in good condition on demand, or else paid for. No supplies will be furnished by the School for third and fourth year work after July 1, 1920.

Such materials as pens, pencils, note-books, triangles, scales, drawing paper, and tracing cloth, are not supplied by the School, but may be purchased by the student at a very small expense.

Elective Subjects

Students electing any subject not included in their regular schedule will be required to take all examinations in that subject, and to attain a passing grade, before they will be eligible for the diploma of the School.

Status of Students

The ability of students to continue their courses is determined by means of daily work and examinations, but regularity of attendance and faithfulness to daily duties are considered equally essential.

Any student failing to make a satisfactory record, either in school or practical work, may be removed from his position in practical work, or from the School.

A special student is permitted to attend the School, subject to the approval of the Faculty, and may be permitted to take such subjects as the School offers without having passed dependent subjects.

DETAILED INFORMATION

Examinations

Examinations covering the work of the year are usually held at the close of each school year, in June. Exceptions may be made in certain courses where, in the opinion of the Head of the Department, examinations are not necessary. In such cases, with the consent of the Dean, they may be omitted. When a final examination is taken, the year's rating in the subject is usually based one third on the examination and two thirds on the record for the year's work.

Rules of Standing in Scholarship

A student's grade is officially recorded by letters and percentages, as follows: A, excellent, 90 to 100 per cent; B, good, 80 to 89 per cent; C, fair, 70 to 79 per cent; D, passable, 60 to 69 per cent; F, work incomplete or otherwise unsatisfactory, 50 to 59 per cent; FF, complete failure, below 50 per cent.

A final mark of F imposes a condition which must be removed normally by examination upon the afternoons during the first week of the school year for each Division unless otherwise specified by the School. Special examinations can be arranged for only by vote of the Faculty. For all such examinations the College requires the payment of a special fee of five dollars. In case a mark of F is not removed at the date set, the entry will be changed to FF. The student must then discontinue any dependent subjects which he is taking, and can obtain a clear record only by repeating the subject in which F was given. The responsibility for the removal of the condition rests with the student, who is required to ascertain when and how the condition can be removed.

Any student who at the close of the school year has a final record of F in more than two subjects, or a final record of FF in more than one subject, automatically becomes a special student, and remains such until these conditions are removed. This involves the loss of the privilege of being a candidate for a diploma with his class and may involve the loss of assignment to Engineering Practice.

CO-OPERATIVE SCHOOL OF ENGINEERING

No student may qualify as a candidate for a diploma in any given year unless clear in all the required subjects of the lower years of his chosen course. He must also be in good standing in all courses for which he is enrolled.

Entrance requirements or preparatory subjects pursued in the School are considered as required school work.

Cases of special students will be settled by the appropriate standing committees of the Faculty.

Absences

No "cuts" are allowed, and a careful record of attendance upon exercises is kept for each student. Absence from exercises regularly scheduled in any subject will seriously affect the standing of a student, and may cause the removal of the subjects from which he is absent from his schedule and the listing of these subjects as conditioned subjects. In case he presents a reasonable excuse for the absence however, he may be allowed to make up the time lost and be given credit for the work; but he must complete the work at such time and in such manner as his instructor in the subject, with the approval of the Head of his course, shall designate. Laboratory work lost can only be made up when it is possible to arrange for the necessary time during hours when these departments are open for regularly scheduled instruction. Absences from exercises immediately preceding or following a recess are especially serious and entail severe penalizing.

Reports of Standing

Informal reports of the students' standing are issued four times during the school year to first year students, and two times during the year to upperclassmen. Formal reports, covering the year's work, are issued to all students at the close of each year. These reports are made in duplicate, one copy being furnished directly to the student's adviser, while the other is sent to his parents, or guardian.

Parents or guardians will be notified in all cases when students are advised, or required, to withdraw from the School, or placed on probation.

DETAILED INFORMATION

Owing to the short school year, it is of vital importance to the student that he get a clear record in all his work each week. When a student fails to pass in any subject, a notification may be sent to his parents, or guardian, to that effect, so that we may have the home influence exerted to bring his work up to a higher rating.

Every effort is made to keep the student up in his studies. Parents and students are always welcomed by the Dean for conference upon such matters. Special reports on a student's work will be sent to parents at any time, upon request.

Conduct

It is assumed that students come to the School for a serious purpose, and that they will cheerfully conform to such regulations as may from time to time be made. In case of injury to any building, or to any of the furniture, apparatus, or other property of the School, the damage will be charged to the student, or students, known to be immediately concerned; but if the persons who caused the damage are unknown, the cost for repairs may be assessed equally upon all the students of the School.

Students are expected to behave with decorum, to obey the regulations of the School, and to pay due respect to its officers. Conduct inconsistent with the general good order of the School, or persistent neglect of work, if repeated after admonition, may be followed by dismissal, or, in case the offense be a less serious one, the student may be placed upon probation. The student so placed upon probation may be dismissed if guilty of any further offense.

It is desired to administer the discipline of the School so as to maintain a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present, as his own, any work which he has not performed, or to pass any examination by improper means, is regarded as a most serious offense, and renders the offender liable to immediate expulsion. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

CO-OPERATIVE SCHOOL OF ENGINEERING

Socials

In order to provide for the social intercourse of the students, as well as to enable the men in the different divisions to meet one another, socials and entertainments are held for their exclusive enjoyment. An out-door field meet is also held yearly, at the close of the school year, at which time various interclass competitive games are enjoyed.

Outside Interests

A moderate participation in social and athletic activities is encouraged by the Faculty, although a standard of scholarship which is incompatible with excessive devotion to such pursuits is required of the students.

Vacations

Each student has one week of vacation at Christmas time and five weeks during the summer. During the Christmas period of 1919 Division A will have a vacation from December 15 to 20 inclusive and Division B from December 22 to 27 inclusive. During the summer of 1920, Division A will work at Engineering Practice during the first five weeks following the close of school in June and take a vacation for the next five weeks. Division B will have a vacation during the first five weeks after the close of school and report for Engineering Practice at the end of this period.

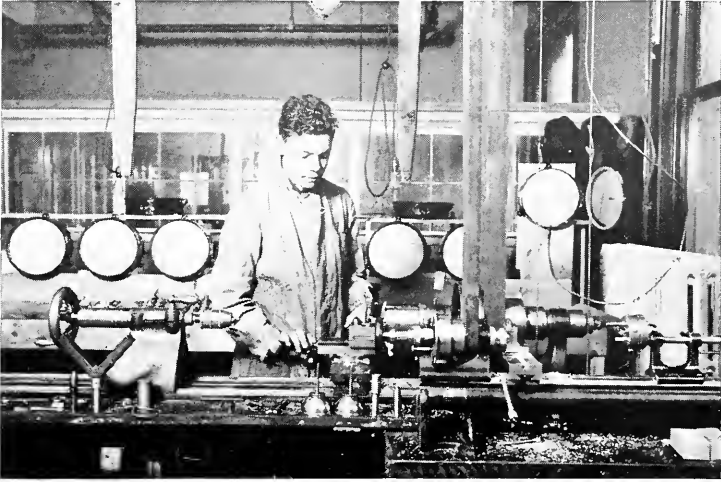
Summer Employment

When a student, for good reason, is unable to continue his Engineering Practice during the summer while the School is not in session, it is sometimes possible to get him leave of absence for the summer so that he can return to his employer in the fall. All special arrangements for the summer work must be referred to the Dean.

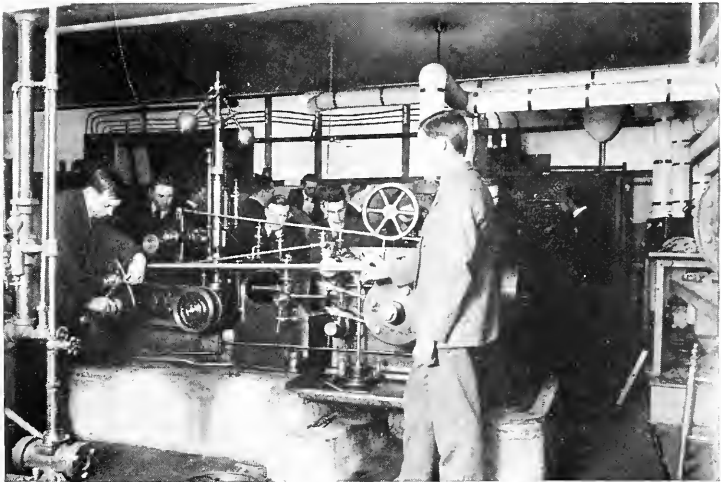
Summer Preparatory Schools

There are day and evening summer preparatory schools, conducted by the Northeastern Preparatory School, and students having entrance conditions, or requiring further preparation for the entrance examinations, may avail themselves of this opportunity to cover the desired work.

Mechanical Engineering Students

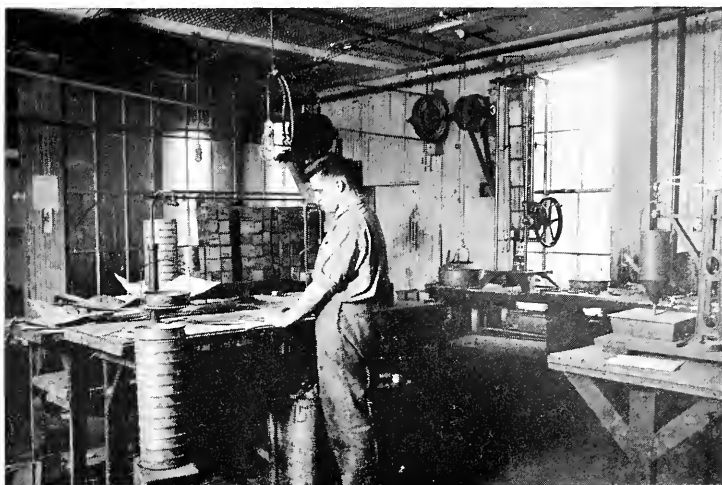


Turning Valve Parts
Sanborn Engineering Company

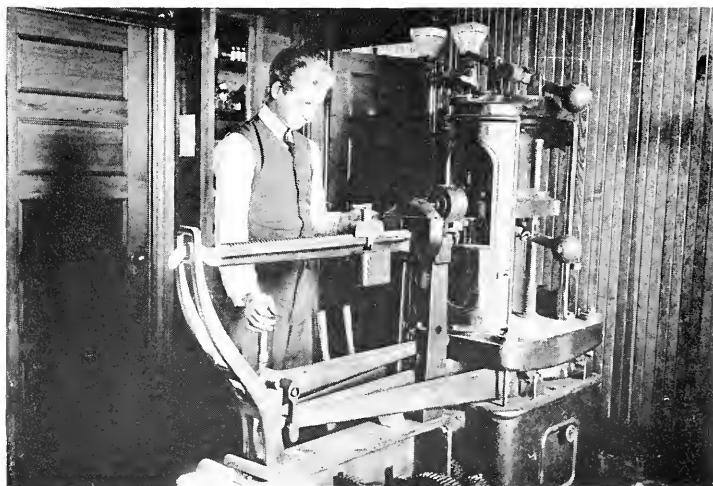


Setting Valves on a Corliss Engine
Class in Engineering Laboratory

Chemical Engineering Students



Testing Road Materials
Warren Bros.—Paving Materials



Making Tensile Tests on Cast Iron
Hunt Spiller Mfg. Corp.—Iron Founders

DETAILED INFORMATION

STUDENT ACTIVITIES

Clubs and Teams

The student body has organized a number of groups, or clubs, and this year we have a Glee Club and Orchestra, in addition to our Basketball and Baseball Teams.

The various activities of the teams are financed by the Athletic Association of the School.

"The CO-OP"

The students issue a monthly paper called "The CO-OP." Pertinent articles by prominent men, as well as school information, make this feature of the school activities very valuable. "The CO-OP" has met with such unqualified success since it was first published in 1916 that it will be retained as a permanent feature.

"The Cauldron"

"The Cauldron" is the year-book of the Co-operative School and is similar to other college annuals issued by the students of most colleges and universities in the spring of each year. This publication carries the usual review of the year's work and activities, classes, socials, etc.

PROFESSIONAL SOCIETY

The upper class students in the various courses have organized a professional society known as the Engineering Society of Northeastern College, for the closer association of the students of the School, and for the discussion and consideration of various problems and new knowledge in the Engineering Field. Meetings are held every few weeks, at which the members are addressed by engineers and other men of prominence. There are four sections of the society, one for each course in the School, namely: The Civil Engineering Section, the Mechanical Engineering Section, the Electrical Engineering Section, the Chemical Engineering Section. All students who have been in School at least one year are eligible for membership in the Society.

REQUIREMENTS FOR GRADUATION

To receive the diploma of the School the student must attend the School not less than two years, which must be those immediately preceding his graduation. He must complete the prescribed studies of the four years, and must, also, pass final examinations, if required, on subjects pertaining especially to his course. In addition to this, he must complete satisfactorily a schedule of Engineering Practice under the supervision of the Faculty.

In all courses, except course IV, the student must, also, prepare a thesis on some subject included in his course of study, or an account of some research made by him, or an original report upon some machine, a work of engineering, or an industrial plant. This thesis, or design, must be approved by the Dean. Theses are to be written on one side only of paper of good quality, 8 x 10½ inches in size, with an inch margin on each side. Theses must be handed to the Dean not later than the day on which the first annual examination occurs. All theses, and records of work done in preparation of theses, are the permanent property of the School.

The diploma of the School represents not only the formal completion of the subjects in the selected course of study, but also the attainment of a satisfactory standard of general efficiency. Any student who does not show in the fourth-year work of his course that he has attained such a standard, may be required, before receiving the diploma, to take such additional work as shall prove his ability.

POSITIONS HELD BY GRADUATES

The graduates of the School have been able to secure positions of the same grade, commanding the same salaries, as the graduates of other good technical schools. Some of them have become engineers in charge of construction, some electrical engineers, some designing draftsmen; some have been employed by the State, or Federal Government, under Civil Service, and still others have gone into teaching. The success of those who have been graduated from the School is the best evidence of the value and thoroughness of the training offered.

GENERAL INFORMATION

Courses of Study

General Statement

The schedules of the various courses are given on the following pages. The first year, it will be observed, is practically the same in all courses. A few exceptions are made in courses where students need some special elementary training in their professional subjects, in order that they may be of more use to their employers in their Engineering Practice.

The school year comprises twenty weeks of class work for each division. The twenty weeks are divided into two terms of ten weeks each, and the subjects in the Course Outlines on the following pages have been arranged by terms. Opposite these subjects will be found the number of hours of class work in recitation, laboratory, or the drawing room, as well as the hours of outside preparation, that have been assigned as the minimum weekly requirement for each subject.

The number in parenthesis, following the subject in the "Outlines of Courses," is the number by which that subject is identified in the descriptive matter under "Subjects of Instruction."

The work is so planned that the student will be required to spend from 50 to 60 hours in preparation and class work during each school week.

When a student elects a course, he is required to complete all subjects in that course not indicated as "Optional," in order to receive a diploma. No subject is to be dropped, or omitted, without the consent of the Committee on Scholarship and the approval of the Dean.

CO-OPERATIVE SCHOOL OF ENGINEERING

CIVIL ENGINEERING

The purpose of this Course is to give the student a broad education in those subjects which form the basis of all branches of technical education, and a special training in those subjects comprised under the term "Civil Engineering." It is designed to give the student sound training, both theoretical and practical, in the sciences upon which professional practice is based.

Civil Engineering covers such a broad field that no one can become expert in its whole extent. It includes Topographical Engineering, Municipal Engineering, Railroad Engineering, Structural Engineering, and Hydraulic and Sanitary Engineering. It covers land surveying, the building of railroads, harbors, docks and similar structures; the construction of sewers, waterworks, roads, and streets; the design and construction of girders, roofs, trusses, bridges, buildings, walls, foundations, and all fixed structures. All of these branches of Engineering rest, however, upon a relatively compact body of principles, and in these principles the students are trained by practice in the class room, drawing room, the field, and the testing laboratory.

The course is designed to prepare the young engineer to take up the work of assisting in the design and construction of structures, to aid in the location and construction of steam and electric railways, sewerage and water supply system, and to undertake intelligently supervision of work in the allied fields of mining, architectural, and electrical engineering, and general contracting.

I. CIVIL ENGINEERING

FIRST YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Mathematics I a (10)	6 6	Mathematics I b (11)	6 6
Physics I (20)	5 5	Physics I	5 5
Descriptive Geometry I (42)	4 1	Descriptive Geometry I (42) ..	4 1
Mechanical Drawing (40)	6 0	Mechanical Drawing (40)	6 0
English (1)	3 3	English (1)	3 3
Surveying I (100)	2 3	Surveying I (100)	2 3
Surveying I Field and Plot (101) ..	6 0	Surveying I Field and Plot (101) ..	6 0
Physical Training (50)	2 0	Physical Training (50)	2 0

SECOND YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Surveying II (102)	2 2	Surveying II (102)	2 2
Surveying II, Field and Plot (103)	6 0	Surveying II, Field and Plot (103)	6 0
Applied Mechanics (200)	3 4½	Applied Mechanics (200)	3 4½
Physics II (22)	3 3	Physics II (22)	3 3
Physics Laboratory (23)	2 2	Physics Laboratory (23)	2 2
Mathematics II a (12)	5 5	Mathematics II b (13)	5 5
Elementary Electricity (301) ..	2 2	Elementary Electricity (301) ..	2 2
Descriptive Geometry II (43) ..	2 0	Descriptive Geometry II (43) ..	2 0
Mechanism (210)	3 3	Structural Drawing (120)	3 0
Physical Training (50)	2 0	Physical Training (50)	2 0

THIRD YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Railroad Curves (110)	3 4½	*Railroad Curves (110)	3 4½
Railroad Eng. Field and Draw. (111)	6 0	†Railroad Earthwork (110A) ..	3 4½
Highway Engineering (112)	2 2	Railroad Eng. Field and Draw. (111)	6 0
Strength of Materials (201)	3 4½	Theory of Structures I (130) ..	3 4½
Hydraulics (170)	3 4½	Geology (190)	2 2
Applied Electricity (310)	2 2	Strength of Materials (201)	3 4½
Applied Electricity Lab. (311) ..	3 2	Hydraulics (170)	2 3
Heat Engineering (230)	3 4½	Applied Electricity (310)	2 2
Chemistry (402)	3 3	Applied Electricity Lab. (311) ..	3 2
Engineering Conference (500) ..	1 0	Heat Engineering (230)	3 4½
		Engineering Conference (500) ..	1 0

FOURTH YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Structural Design (140)	6 0	Structural Design (140)	6 0
Theory of Structures II (131) ..	6 12	Theory of Structures II (131) ..	6 12
Concrete Structures (150)	2 2	Concrete Structures (150)	2 2
Concrete Design (151)	3 0	Concrete Design (151)	3 0
Plate Girder Design (132)	2 4	Foundations (165)	2 2
Materials (160)	3 3	Sanitary Engineering (180)	3 3
Hydraulic Engineering (174) ..	3 3	Testing Materials Lab. (255) ..	2 0
Engineering Conference (500) ..	1 0	Engineering Conference (500) ..	1 0
Thesis	3 0	Thesis	6 0

*First three weeks.

†Last seven weeks.

CO-OPERATIVE SCHOOL OF ENGINEERING

MECHANICAL ENGINEERING

The Mechanical Engineering course is designed to give the student a broad foundation in those fundamental subjects which form the basis for all professional engineering practice, and especially to equip the young engineer with a knowledge of the various phases of Mechanical Engineering. The course embraces instruction by text-book, lecture, laboratory, and work-shop practice, with special reference to the following branches: Applied Mechanics, Heat Engineering, Industrial Engineering, Hydraulic Engineering, Applied Electricity, and Machine Design.

The instruction aims to develop in the student the ability to think clearly and logically in the application of fundamental principles to engineering problems. The class-room work in the professional subjects is arranged with due regard to modern industrial conditions, in order that the student may connect theory with practice and appreciate the necessity of both in order to become a successful engineer. With this in view, special courses are given involving a discussion of problems which have presented themselves to the students and requiring a familiarity with the contents of current engineering periodicals. At all times it is sought to develop self-confidence in the student, and he is encouraged to take the initiative.

II. MECHANICAL ENGINEERING

FIRST YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Mathematics I a (10)	6 6	Mathematics I b (11)	6 6
Physics I (20)	5 5	Physics I (20)	5 5
Descriptive Geometry I (42) ..	4 1	Descriptive Geometry I (42) ..	4 1
Mechanical Drawing (40)	9 0	Mechanical Drawing (40)	12 0
English (1).....	3 3	English (1).....	3 3
Chemistry (402).....	3 3	Physical Training (50).....	2 0
Physical Training (50).....	2 0		

SECOND YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Mechanism (210)	3 3	Mechanism (210)	1 1
Mechanical Eng. Drawing (220)	9 0	Mechanical Eng. Drawing (220)	9 0
Descriptive Geometry II (43) ..	2 0	Descriptive Geometry II (43) ..	2 0
Mathematics II a (12).....	5 7½	Mathematics II b (13)	5 7½
Physics II (22)	3 3	Physics II (22)	3 3
Physics Laboratory (23)	2 2	Physics Laboratory (23)	2 2
Applied Mechanics (200)	3 4½	Applied Mechanics (200)	3 4½
Elements of Electricity (301) ..	2 2	Elements of Electricity (301) ..	2 2
Physical Training (50).....	2 0	Precision of Measurements (25)	1 1
		Physical Training (50).....	2 0

THIRD YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Heat Engineering (230)	3 4½	Heat Engineering (230)	3 4½
Strength of Materials (201)	3 4½	Strength of Materials (201)	3 4½
Machine Drawing (221)	9 0	Machine Drawing (221)	9 0
Applied Electricity (310)	2 2	Applied Electricity (310)	2 2
Applied Electricity Lab. (311) ..	3 2	Applied Electricity Lab. (311) ..	3 2
Hydraulics (170).....	3 4½	Hydraulic (170)	2 3
Power Plant Equipment (235) ..	2 1	Foundry Practice (237)	1 0
Engineering Conference (500) ..	1 0	Geology (190)	2 2
		†Surveying (101A)	3 0
		Engineering Conference (500) ..	1 0

FOURTH YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Machine Design, Statics and Dynamics (225)	9 6	Machine Design, Statics and Dynamics (225)	9 6
Industrial Plants (236)	6 6	Industrial Plants (236)	4 4
Journals and Reports (240)	1 3	Journals and Reports (240)	1 3
Engineering Laboratory (250) ..	2 2	Testing Materials Lab. (255) ..	2 0
Concrete Structures (150)	2 2	Concrete Structures (150)	2 2
Concrete Design (151)	3 0	Concrete Design (151)	3 0
Materials (160)	3 3	Standard Engineering Products and Processes (260)	3 3
Engineering Conference (500) ..	1 0	Engineering Conference (500) ..	1 0
Thesis	3 3	Thesis	6 3

†For three weeks only.

CO-OPERATIVE SCHOOL OF ENGINEERING

ELECTRICAL ENGINEERING

Probably none of the branches of scientific knowledge has been so markedly modified during the past decade as that relating to Electricity, nor has any other exerted such a profound influence upon the scientific thought of the period. A science, like a planet, grows in the main by a process of infinitesimal accretion. Its theory is built like a cathedral through the addition by many builders of many different elements, and this is pre-eminently true of Electricity. It is absolutely essential that the Electrical Engineer who hopes to make a success of his work should be able to grasp readily and absorb effectively the meaning and content of the many scientific memoirs recording the results of research bearing upon and directly influencing his chosen branch of Engineering.

He must have a thorough appreciation of physical theory, a clear understanding of chemical principles, and a broad working knowledge of mathematics. It is essential that each student planning to take this course should realize the fundamental necessity of obtaining a solid grounding in these three subjects upon which the success of his future work will definitely hinge, nor can he be too strongly urged to include Physics in his High school preparatory course if he hopes to avoid difficulty in the earlier years.

It is not the purpose of the course to attempt the impossible in aiming to turn out electrical engineers fully trained in all the branches of the science, especially as it is becoming daily more differentiated and specialized. The course is designed rather to lay a broad and secure foundation for future progress along the lines of activity which may particularly appeal to each individual student and give him a good working knowledge of the essential principles which underlie each of the more specialized branches of professional work.

Parallel with the theoretical work, runs a carefully planned course of laboratory instruction which is intended to develop the student's power of accurate observation, of planning work and methods of procedure for himself with due regard to saving of time and labor and precision of the results attained.

For more detailed information the reader is referred to the paragraphs descriptive of the several courses as found in the Synopsis of Studies below.

III. ELECTRICAL ENGINEERING

FIRST YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Mathematics I a (10)	6 6	Mathematics I b (11)	6 6
Physics I (20)	5 5	Physics I (20)	5 5
Chemistry (402)	3 3	Elements of Electrical En- gineering (300)	3 3
Descriptive Geometry I (42)....	4 1	Descriptive Geometry I (42)....	4 1
Mechanical Drawing (40)	6 0	Mechanical Drawing (40).....	6 0
English I (1)	3 3	English I (1)	3 3
Physical Training (50).....	2 0	Physical Training (50).....	2 0

SECOND YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Direct Current Machinery (320)	4 4	Direct Current Machinery (320)	5 5
Direct Current Mach. Lab. (321)	7 0	Direct Current Mach. Lab. (321)	7 0
Mathematics II a (12).....	5 5	Mathematics II b (13)	5 5
Physics II (22)	3 3	Physics II (22)	3 3
Physics Laboratory (23)	2 2	Physics Laboratory (23)	2 2
Applied Mechanics (200)	3 4½	Applied Mechanics (200)	3 4½
Mechanism (210)	3 3	Machine Drawing (221)	3 0
Mechanical Eng. Drawing (220)	3 0	Precision of Measurements (25)	1 1
Physical Training (50).....	2 0	Physical Training (50).....	2 0

THIRD YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Alternating Currents (330)	5 5	Alternating Currents (330)	5 5
†Alternating Current Lab. (331)	6 3	†Alternating Current Lab. (331)	6 3
†Direct Current Testing Lab. (322)	6 3	†Direct Current Testing Lab. (322)	6 3
Electrical Measurements (340)	2 2	Electrical Measurements (340)	2 2
Electrical Measurements Lab. (341)	3 3	Electrical Measurements Lab. (341)	3 3
Heat Engineering (230)	3 4½	Heat Engineering (230)	3 4½
Hydraulics (170).....	3 4½	Hydraulics (170).....	2 3
Strength of Materials (201).....	3 4½	Geology (190)	2 2
Engineering Conference (500).....	1 0	**Surveying (101A)	3 0
		Engineering Conference (500).....	1 0

FOURTH YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Alt. Current Machinery (350).....	6 6	Alt. Current Machinery (350).....	6 6
Alt. Current Mach. Lab. (351)	6 3	Alt. Current Mach. Lab. (351)	6 3
Generation, Transmission and Utilization of Power (360)	4 6	Generation, Transmission and Utilization of Power (360)	4 6
Advanced Electricity (370).....	2 2	Advanced Electricity (370).....	2 2
Engineering Laboratory (250)	2 2	Testing Materials Lab. (255).....	2 0
Materials (160)	3 3	Standard Eng. Products and Processes (260)	3 3
Engineering Conference (500).....	1 0	Engineering Conference (500).....	1 0
Thesis	3 3	Thesis	6 3

†Come on alternate bi-weekly periods.

**Four weeks course only.

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CHEMICAL ENGINEERING

The war has taught us that all industry is more or less chemical in character. All manufacturing industries are chemical to a greater or less degree, and that for their successful prosecution the chemical engineer is an essential factor. Owing to the keen competition among commercial nations, the chemist must face bigger problems and larger responsibilities for the proper utilization and conservation of our resources. For these reasons the course in chemical engineering has for its purpose the training of students competent to take responsible places in the operation of industries based on chemical principles. During their course the students are employed in chemical industries, such as gas manufacturing plants, chemical engineering companies, etc. They not only get an excellent training in the theory of such work in school, but also a knowledge of the commercial side of the industry as well. The class work includes training in Inorganic, Analytical, Organic, Industrial, and Physical Chemistry, which is accompanied by appropriate laboratory work.

In addition to the foregoing subjects, the student is given a good knowledge of mechanical and electrical subjects, such as Drawing, Mechanism, Applied Mechanics, Applied Electricity, etc., which are given so that they have special bearing on the work of the Course.

IV. CHEMICAL ENGINEERING

FIRST YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Mathematics I a (10)	6 6	Mathematics I b (11)	6 6
Physics I (20)	5 5	Physics I (20)	5 5
Descriptive Geometry I (42) ..	4 1	Descriptive Geometry I (42) ..	4 1
Mechanical Drawing (40)	6 0	Mechanical Drawing (40)	6 0
English (1)	3 3	English (1)	3 3
Inorganic Chemistry (400)	4 4	Inorganic Chemistry (400)	4 4
Inorganic Chemistry Lab. (401) ..	6 0	Inorganic Chemistry Lab. (401) ..	6 0
Physical Training (50)	2 0	Physical Training (50)	2 0

SECOND YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Qualitative Analysis (410)	2 4	Qualitative Analysis (410)	2 4
Qualitative Analysis Lab. (411) ..	6 0	Qualitative Analysis Lab. (411) ..	6 0
Mathematics II a (12)	5 5	Mathematics II b (13)	5 5
Physics II (22)	3 3	Physics II (22)	3 3
Physics Laboratory (23)	2 0	Physics Laboratory (23)	2 0
Applied Mechanics (200)	3 4½	Applied Mechanics (200)	3 4½
Mechanical Eng. Drawing (220) ..	6 0	Machine Drawing (221)	6 0
Elements of Electricity (301) ..	2 2	Elements of Electricity (301) ..	2 2
Mechanism (210)	3 3	Precision of Measurements (25) ..	1 1
Physical Training (50)	2 0	Physical Training (50)	2 0

THIRD YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Quantitative Analysis (420)	2 4	Technical Analysis (430)	2 4
Quantitative Analysis, Lab. (421) ..	6 0	Technical Analysis, Lab. (431) ..	6 0
Organic Chemistry (440)	3 3	Organic Chemistry I (440)	3 3
Organic Chemistry, Lab. (441) ..	6 0	Organic Chemistry I, Lab. (441) ..	6 0
Heat Engineering (230)	3 4½	Heat Engineering (230)	3 4½
Applied Electricity (310)	2 2	Applied Electricity (310)	2 2
Applied Electricity, Lab. (311) ..	3 2	Applied Electricity, Lab. (311) ..	3 2
Strength of Materials (401)	3 4½	German I (490)	3 3
Hydraulics (170)	3 4½	Geology (190)	2 2
Engineering Conference (500) ..	1 0	Engineering Conference (500) ..	1 0

FOURTH YEAR

FIRST TERM	Hours per week Ex. Prep.	SECOND TERM	Hours per week Ex. Prep.
Industrial Chemistry (450)	3 3	Industrial Chemistry (450)	3 3
Industrial Chemistry, Lab. (451) ..	6 0	Industrial Chemistry, Lab. (451) ..	6 0
Chemical Engineering (460)	3 3	Chemical Engineering (460)	3 3
Organic Chemistry II (442)	2 2	Organic Chemistry II (442)	2 2
Organic Chemistry II, Lab. (443) ..	6 0	Theoretical Chemistry (370)	2 2
Theoretical Chemistry (470)	3 3	Experimental Problems (380) ..	10 4
Theoretical Chemistry, Lab. (471) ..	3 0	German II (491)	3 3
German II (491)	3 3	Engineering Conference (500) ..	1 0
Engineering Conference (500) ..	1 0		

Subjects of Instruction

Instruction is given by lectures and recitations, and by practical exercises in the field, in the laboratories, and in the drawing rooms. A great value is set upon the educational effect of these exercises, and they form the foundation of each of the four courses. Text-books are used in many subjects, but not in all. In many branches the instruction given differs widely from available text-books; and in most of such cases notes on the lectures and laboratory work are issued and furnished to the students. Besides oral examinations in connection with the ordinary exercises, written examinations are held from time to time. At the close of the year, in May and June, general examinations are held.

In the following pages will be found a more or less detailed statement of the scope, as well as the method of instruction, of the subjects offered in the various courses. The subjects are classified, so far as possible, related studies being arranged in sequence.

The subjects are numbered, or numbered and lettered, for convenience of reference in consulting the various Course Schedules. Since the total number of hours per term devoted to a subject sometimes varies in different courses, these hours are not in every case given in connection with the following descriptions.

The requisites for preparation include not only the subjects specified by number, but also those required as a preparation for them. The reason for this is in order that to carry on properly the more advanced subjects, the student must have become proficient in all subjects necessary for a clear comprehension of the last subject. Some studies, specified as being required in preparation, may be taken simultaneously, and must be completed before starting on more advanced work.

By careful consideration of the Course Schedules, in connection with the following Description of Subjects, the applicant for a special course may select, for the earlier part of that course, such subjects as will enable him to pursue later those more advanced subjects which he may particularly desire.

SYNOPSIS OF COURSES

Applications for exception from the required preparation, as stated in connection with each subject described below, will be passed on by the Faculty.

The topics included in the list which follows are subject to change at any time by action of the School authorities.

SYNOPSIS OF COURSES

1. English I

Preparation: an acceptable high school course in English

English Composition. English I is an elementary course especially adapted to the needs of men who expect to follow the engineering profession. Canby's English Composition in Theory and Practice forms the basis of the course. The work consists of lectures, recitations, class discussions, weekly themes, occasional impromptu themes in the class room, oral themes, and a limited amount of outside reading, particularly in modern scientific journals. The material for the themes, both oral and written, is drawn mainly from the student's study in the laboratory, or from his experiences in his Engineering Practice with the co-operating firm.

2. English II

Review Course. (First half year). English II is designed to help all men who, after taking the first year's work, are still, in the instructor's opinion, weak in English. It is essentially a review of English I, and is recommended to men who failed to receive a grade of 69% in that course, and is required of such men before they may elect English III.

3. English III

Preparation: English I

English for Engineers. English III offers an opportunity for upper-classmen who feel the need of a more intensive training in English to get further instruction in practical composition. The material of the course is wholly technical and deals particularly with engineering problems. Reports and business letters receive especial attention. The course will be given only when a sufficient number of Juniors and Seniors express their desire to enroll for it.

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4. English IV

Oral English for Engineers. English IV deals wholly with the problems of spoken English which confront engineers. It offers practice in Exposition and Argumentation, on subjects relating to Engineering Practice. The work will consist of oral reports, explanations of technical processes for the understanding of the untechnically trained mind, debates on argumentative points, and class discussions. Some attention will be paid to the correction of faults in voice production and the elimination of mannerisms in speech and delivery. The course will be given if a sufficient number of students desire to take it. It is elective to all men who have passed English I with a grade of 70% or better.

10. Mathematics I a

Preparation: Algebra, Plane Geometry

The first part of this course is devoted to a review of Algebra and Geometry. The topics studied in Algebra are: Affected quadratic equations, fractional and negative powers and indices, the binomial theorem, and rationalizing denominators. The Geometry includes the study of mensuration of plane and solid figures.

The main part of the course, Mathematics Ia is devoted to the study of Plane Trigonometry, including circular measure, co-ordinates, trigonometric ratios, solution of the right and oblique triangles, law of sines, law of cosines, and law of tangents. Goniometry, and the application of Trigonometry to problems in Physics and Engineering.

The student is also given considerable practice in the use of logarithms as applied to exponential equations, variation, and other calculations occurring in Engineering Practice.

11. Mathematics I b

This course is a study of Plane Analytic Geometry as a preparation for Calculus. The subjects discussed include the straight lines, the conics, and loci problems. The student learns the methods of plotting curves, both in rectangular and polar co-ordinates, and of obtaining properties of curves from their equations. The course also includes the plotting of trigonometric, logarithmic, and exponential functions.

SYNOPSIS OF COURSES

12. Mathematics II a

The course is devoted to the study of Differential and Integral Calculus, rate of increase, differentiation of algebraic, trigonometric and logarithmic functions, problems in maxima and minima by differentiation with practical applications, integration, definite integrals, calculation of areas, mean value, and center of gravity.

13. Mathematics II b

This is a continuation of Mathematics II a. The course covers the calculation of volumes, moments of inertia, double and triple integrals in finding areas and volumes, use of integral tables and the application of calculus to problems in Engineering.

20. Physics I

This course consists of a study of general mechanics, statics and dynamics. The subjects studied are: equilibrium of bodies acted upon by parallel forces, equilibrium of bodies acted upon by concurrent forces, uniform velocity; uniformly accelerated motion; motion of bodies projected vertically, horizontally and obliquely, Atwood's machine, incline plane, friction, energy, work, horse-power, angular velocity and acceleration, kinetic energy of rotation, centrifugal force, fluid pressure, hydrometers, and Archimides' principle. It is the purpose of the course to lay a thorough foundation for subsequent study of experimental and technical physics. Hence it is planned with immediate reference to familiarize the pupil with the fundamental principles of the science.

22. Physics II

Preparation: 20

This course consists of a continuation of Physics I in the study of Optics and Heat. It includes the study of mirrors, refraction, lenses, optical instruments, dispersion, interference, diffraction and polarization of light. A study is also made of Thermometry, calorimetry, change of state, conduction and radiation, mechanical equivalent of heat, efficiency of engines, and Carnot's cycle.

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24. Physics Laboratory

The work in this course consists of a series of experimental exercises given in the second year, performed by each student. The experiments supplement the lecture and class room work in Physics I and Physics II. The experiments on Mechanics include the use of verniers, micrometers, and spherometers, calculation of true weights, determination of specific gravity of solids by various methods, and motion on an inclined plane. The experiments on Optics include the determination of radii of curvature and indices of refraction of lenses, the position of images in combinations of lenses, and the uses of the Spectrometer and Spectroscope. The experiments on Heat include the calibration of a thermometer, determination of temperature of a mixture, area of indicator diagrams by the planimeter, the relation between the pressure and boiling point of water, and the use of the air thermometer.

25. Precision of Measurements

Preparation: 10, 11

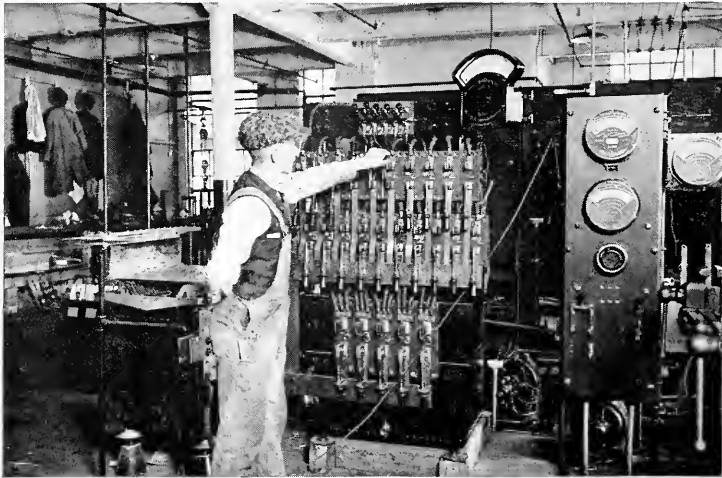
This course, which is required of all students in the second half of the second year, comprises a thorough discussion of the fundamentals of the Theory of Measurements, including a study of the Sources of Error, the Best Representative Value of the result of a series of measurements, the determination of the several Precision Measures of the result of one's work, the converse problem of how best to proceed in order to reach a given degree of precision, and a thorough consideration of the proper use of Significant Figures.

40. Mechanical Drawing

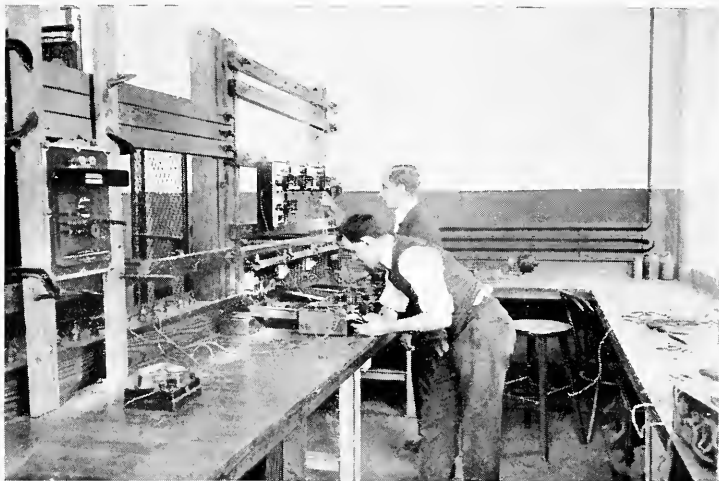
This course extends throughout the first year, and is taken by first year students in all Engineering Courses. The work is planned on the assumption that the student understands simple geometrical construction as studied in plane geometry.

It consists of exercises in the proper use and care of drafting tools; a thorough study of the principles of orthographic projection with applied problems relating to engineering drawing. Special attention is given to lettering, tracing, and dimensioning.

Electrical Engineering Students



Testing a 10,000 Ampere Storage Battery Control Panel
Condit Electrical Mfg. Co.

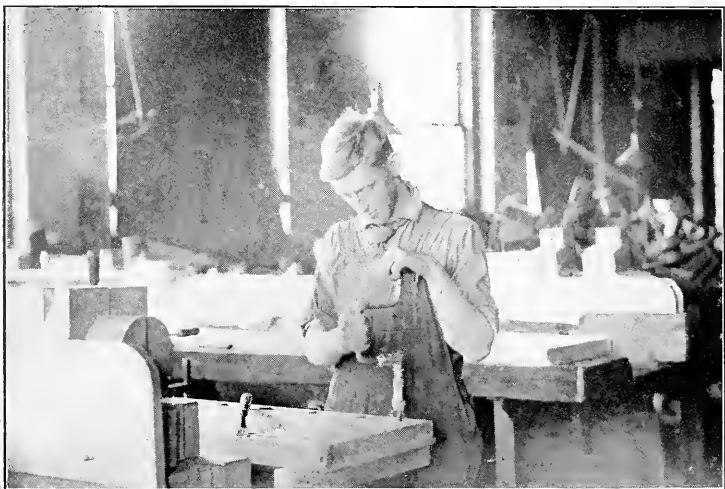


Testing Meters
Edison Electric Illuminating Co.

Mechanical Engineering Students



Operating a Lathe
H. G. Butt Mfg. Company



Wood Working
Pattern Shop—Boston Elevated Railway Co.

SYNOPSIS OF COURSES

42. Descriptive Geometry I

Beginning with an explanation of the meaning and value of the subject, a study is made of the representation of simple solids, then lines and planes and the elementary problems relating to the same. Later in the course, the work includes the more important relations between lines and planes and solids, embracing sections and developments. Practical problems, isometric drawing, and oblique projections are given.

43. Descriptive Geometry II

Preparation: 42

The course is a continuation of Descriptive Geometry I, and deals with single and double curved surfaces; their intersection by oblique planes; tangent planes, penetrations, development, and so forth. Various practical problems are given to illustrate the applications of the principles studied.

50. Physical Training

A special arrangement has been made with the Department of Recreation and Health whereby it is possible for any students in the School who desire it to get the Senior privileges of the gymnasium and natatorium, from one to six P. M. daily, upon the payment of five dollars for either the gymnasium or natatorium privilege or seven dollars and fifty cents for both privileges. However, the School shares the expenses and the students are required to pay only two dollars and fifty cents for the gymnasium privilege.

100. Surveying I

Preparation: 10, 11

This course consists of two lectures, or recitations, per week during the first year in which the following are taken up: the theory of the chain, tape, compass, transit and level, and their adjustments; the method of measuring traverses for

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area, and location of artificial features, buildings, and fences; such details as crooked boundaries, city surveying, and deeds of property; the method of running profile and grade lines; the computation of traverses and areas; the use of contour maps in road location and drainage; and the U. S. system of public land surveying.

101. Surveying I (Fieldwork and Plotting)

Preparation: 100

This course is taken simultaneously with Surveying I, and consists of six hours of exercise per week, throughout the first year. The student is taught the use of the chain, tape, compass, transit, and various forms of leveling instruments in the field. The work in the drawing room consists in making computations and scale drawings of a compass survey, transit survey, and the layout of a city block, by the methods best adapted to the plotting of these various surveys.

101A. Surveying (Fieldwork)

This is a brief course in surveying fieldwork for students taking Courses II and III, to give them instruction in the essential principles of surveying practice, including the use of the transit, level, and other instruments.

102. Surveying II

Preparation: 100, 101

This is a continuation of Surveying I, and consists of two lectures or recitations per week, throughout the second year. The student is taught the theory of plan and geodetic triangulation as a basis for surveys of extended areas, including methods of measuring a base line accurately and the corrections to be applied to observed measurements. Then the methods of filling in topographic details are studied. This work includes the theory and use of the stadia and plane table, photographic surveying, and barometric and trigonometric leveling. Astronomical observations for the determination of latitude, longitude, and azimuth form a necessary part of the course, and a brief consideration of hydrographic and mine surveying complete the year's work.

SYNOPSIS OF COURSES

103. Surveying II (Fieldwork and Plotting)

Preparation: 102

This course is taken simultaneously with Surveying II, and consists of six hours of exercise per week throughout the second year. The field work in the fall is devoted to making topographic surveys by stadia and plane table. During the winter the notes taken are plotted, as well as other drawing room problems, such as a plot of a photographic survey and a mine survey. This is supplemented by some astronomical observations during the short winter days. In the spring, the time is devoted to barometric and sextant observations, and if time permits, a little work in triangulation.

110. Railroad Curves

Preparation: 100, 101

This course consists of three hours of exercise a week throughout the first thirteen weeks of the third year. A thorough study is made of the mathematics of circular, parabolic, and spiral curves, and their application to practical work. Particular attention is given to compound curves. The practical applications considered are mostly in connection with railroad location and alignment, but the methods can be applied with slight changes to highway and pipe line location. The course might almost be considered as a course in railroad design and location, since the many problems occurring in preliminary and location surveys form the bases of the class room work. It is obvious that the problems of location will appear at the points where the direction of the line changes; hence the necessity for a thorough understanding of the possibilities of curves as an essential part of the training of a railway engineer.

110A. Railroad Earthwork

Preparation: 110

This is a continuation of Railroad Curves 110, and consists of three exercises a week, for the last seven weeks of the third year. The course is designed to give the student a good working knowledge of the various methods of staking out and computing earthwork, especial attention being paid

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to railroad cross-sections. Particular consideration is also given to the source of inaccuracy introduced by the ordinary methods of computing, and the various practical considerations which may render these methods as precise in the long run as the more refined methods. The relative importance of earthwork in the railways of the country has been shown recently by the great amount of time needed to measure it during the course of the federal physical valuation of the railways. This has resulted in an increased interest in the matter on the part of railway engineers, and the adoption of some new methods designed to secure increased speed in field or office work.

111. Railroad Fieldwork and Drawing

Preparation: 110 and 110A

This course consists of six hours of exercise a week throughout the third year. In the fall fieldwork, a reconnaissance is first made of a railroad about a mile and a half in length, followed by a preliminary survey, with transit and level, as a basis for fixing the location survey. All this work follows modern practice in laying out railroads. Practice is given in taking topography by hand level and top, and also by stadia and plane table. The fieldwork in the spring is devoted to a systematic drill in running curves of various kinds, including transition curves, and in staking out earthwork. The drawing consists in plotting the preliminary survey of the railroad surveyed. Following this, a problem in contour location is studied in detail.

112. Highway Engineering

Preparation: 110

This course consists of two lectures, or recitations, a week, during the first term of the third year. The subjects considered are the location, construction, and maintenance of roads, street design, and street drainage, sidewalks, pavement foundations, and the construction, cost, and maintenance of the various kinds of roads and pavements, including asphalt, brick, cobblestone, stone-block, and wood-block, macadam, both water bound and bituminous, bituminous concrete and hydraulic cement concrete, and gravel and earth.

SYNOPSIS OF COURSES

The science of Highway Engineering is in a stage of transition brought about by the advent of the automobile. New materials and methods such as bituminous binders on macadam roads and the use of concrete for the wearing surface have greatly extended a field that had been rather neglected by engineers during the years immediately preceding. Consequently, today the science offers a wide field for those who care to specialize in this branch.

120. Structural Drawing

The course in structural drawing consists of one exercise of three hours each week in the drawing room during the second term of the second year. The time is devoted to the drawing of standard sections of structural steel shapes and connections and the preparation of drawings representing elementary structural details. This course is designed to familiarize the student with the conventional signs for riveting, riveted connections, and the dimensioning and detailing of structural parts.

130. Theory of Structures I

Preparation: 201

This is a course of thirty exercises in the second term of the third year, devoted to class and drawing-room work, in studying the loads, reactions, shears, and moments acting upon structures of various kinds, as roofs and bridges. A thorough study is also made of the various functions of the influence line; the methods used to determine the position of moving loads to produce maximum shears and moments on bridges and the design of beams.

131. Theory of Structures II

Preparation: 130

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This course consists of six lectures or recitations per week throughout the fourth year. It treats of the computation and design of structures of wood, steel, and masonry, by analytical and by graphical methods. The subjects considered are: roof and bridge trusses of various types, such as simple trusses, bridge trusses with secondary web systems, including the Balti-

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more and Pettit trusses, and trusses with multiple web systems, lateral and portal bracing, transverse bents, viaduct towers, and cantilever bridges. A study is also made of the design of columns, tension members, pin and riveted truss joints, trestles of wood and steel, masonry dams, retaining walls, and arches. During the course the student is given training in the use of the standard handbooks in structural work. The object is to train the student thoroughly in the application of mechanics to the design of structures.

132. Plate Girder Design

Preparation: 201, 130

Given two hours a week for the first half of the fourth year, this course aims to fit the student to design plate girders according to the best current engineering practice. The theory of the plate girder is first taken up and the exact and approximate methods of design discussed. Rivets and riveted joints, rivet pitch, and all details involved in the design of plate girders, such as web stiffeners, connection angles, and splices of the various parts are studied. During the last exercises, a complete design of a thorough plate girder, single track, railroad bridge is made.

140. Structural Design

Preparation: 131, 132

This is a course of six hours per week throughout the fourth year, in which the students are instructed in the design of structures of wood and steel. Each student is given a set of data and is required to perform all the computations and to make designs and working drawings for structures, such as roof trusses and railroad bridges. His work is criticized as it progresses.

150. Concrete Structures

Preparation: 201

This is a course of two recitations per week. The theory of reinforced concrete is studied and applied to the design of slabs and simple beams, T-beams, columns, and footings. The practical as well as the theoretical limitations of concrete structures are considered.

SYNOPSIS OF COURSES

151. Concrete Design

Preparation: 150

This course is taken in conjunction with the course in Concrete Structures (150) and is given in one recitation of three hours each week throughout the year. A large part of the work is done in the drafting room, where each student makes working drawings, using the results obtained in previously assigned problems. The problems assigned include the design of factories, retaining walls, masonry dams, and concrete arches.

160. Materials

Preparation: 201

This course consists of three lectures, or recitations, per week throughout the first term of the fourth year, in the study of methods of testing and the strength of various materials used by the engineer. A detailed study is also made of the methods of manufacturing, properties, and uses, of materials used in engineering work, such as lime, cement, concrete, brick, wood, stone, iron, and steel. Each student is required to prepare, and present to the class, a paper on some subject of especial importance, which is assigned by the instructor.

165. Foundations

Preparation: 201

This course consists of two lectures a week during the second half of the fourth year. The subjects treated in this course are pile foundations, including those of timber and concrete, sheet piles, coffer-dams, box and open caissons, pneumatic caissons, pier foundations in open wells, bridge piers, and abutments.

170. Hydraulics

In this course a study of Hydrostatics and Hydrodynamics is made. In the first term the subjects considered are: The pressures on submerged areas, together with their points of application; the flow of water through orifices, short tubes, and nozzles; and the various formulae relating to the flow of water over weirs. In the second term, the laws gov-

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erning the flow of water through pipe lines and in open channels, and the dynamic pressure and work of water flowing over curved surfaces, are taken up for discussion.

174. Hydraulic Engineering

Preparation: 170

This course consists of three exercises a week throughout the first term of the fourth year. The course is devoted to a study of irrigation, in which rainfall, run-off, the design and arrangement of canals and distributaries, methods of applying water to the soil, location and capacity of reservoirs, location and construction of dams, and other special works employed in this branch of engineering, are taken up for discussion. The student is instructed in the use of hydraulic diagrams, to obtain the discharge of conduits and canals and the flow of water in open channels. Instruction is also given in the theory and practice of stream measurements, methods and instruments used in this work, and the working up and use of data obtained.

180. Sanitary Engineering

Preparation: 170, 174

The course in Sanitary Engineering consists of three exercises per week, in the second half of the fourth year. The first part of the course deals with sewerage systems and sewage disposal plants from an engineering standpoint. A study is made of the factors entering into the design of sewers for towns and cities, the design and construction of sewage disposal and sewage treatment plants, and the maintenance of the system. A short course in water supply is also given, in which is discussed the principles governing the quantity of water required for cities and towns, the determination of the run-off from drainage basins, the necessary storage to guarantee the necessary supply, the design of distribution systems, and the conditions affecting the quality of the water. On account of the limited amount of time which can be given to this course and Course 174 the subjects can not be taken up in great detail.

SYNOPSIS OF COURSES

190. Geology

This course treats of earth movements and the various terrestrial applications of solar energy. The more important geological processes, erosion, sedimentation, deformation and eruption are taken up and discussed.

The latter part of the course is devoted to lectures on the broader structural features of the earth's crust and the application of the principles of structural geology to practical engineering problems.

200. Applied Mechanics

Preparation: 12, 13, 20, 22

The subject consists of three lectures or recitations per week throughout the second year. It comprises a study of statics, concurrent forces, parallel forces and couples, and the solution of problems with ropes, wheels, frictionless planes, hinges, stresses in frames, distributed forces, center of gravity and moment of inertia. Then follows a thorough study of kinematics and dynamics, including the equations for uniform and varying rectilinear motion, centrifugal force, work, power and kinetic energy.

201. Strength of Materials

Preparation: 200

This course comprises a study of the strength of materials, mathematically treated. In the first term the subjects studied are: The theory and experimental basis of tension, compression, shear, resilience, modulus of elasticity, and ultimate stress in engineering materials; the design of beams, including stresses produced by bending, moment and shear diagrams, longitudinal shear, and deflection; also the strength of shafts and springs. In the second term, which is taken only in the civil and mechanical engineering courses, the work is on beams with three supports, the combined stresses of bending and tension, a thorough study of columns, and the design of riveted joints and hooks.

210. Mechanism

This is an introductory course, conducted mainly by graphical methods, and dealing with the fundamental laws govern-

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ing the velocity ratio and paths of mechanical movements and their application to velocity diagrams, simple types of gearing, and other modes of transmission.

220. Mechanical Engineering Drawing.

This consists of study of the technique of graphic expression and its application in giving complete and accurate information to the constructor. Detailed and assembly drawings are made from freehand sketches and other data, but nothing in the nature of a copy is permitted. The work is conducted according to the methods of progressive draftsmen, the greatest emphasis being laid on completeness and accuracy in the use of graphic language.

221. Machine Drawing

This is a continuation of Mechanical Engineering Drawing 220, and includes a few problems in simple machine design.

225. Machine Design

Preparation: 201, 221, 230

This course aims to give the student practice in the application of theoretical principles previously studied and at the same time acquaint him with the many practical details which must be considered in design work. The problems taken up in the early part of the course are of a static nature, while the later problems involve dynamical stresses. The design of some type of pressure vessel, such as a tank or a boiler, constitutes the first problem, the stresses for such a design being known with a good degree of certainty and the materials of construction very reliable. The other problems of the course vary from year to year, but the following are typical of the designs taken up: arbor press, hydraulic flanging clamp, crane, air compressor, punch and shear, stone-crusher, etc.

In each design the constructive details are carefully considered, with special attention to methods of manufacture, provision for wear, lubrication, etc. The work is based on rational rather than empirical methods, the student being re-

SYNOPSIS OF COURSES

quired to make all calculations for determining the sizes of the various parts and all necessary working drawings.

230. Heat Engineering

Preparation: 12, 13, 201

The course includes a study of the principles of thermodynamics; a discussion of the properties of gases, saturated and superheated vapors, especially of air and steam; of the flow of fluids through orifices, nozzles, pipes and meters, a discussion of the action of the steam injector; a study of the various cycles of the hot air, internal combustion and steam engines, of the turbine, air compressor and refrigerator systems. These engineering applications are treated from the physical, analytical and graphical points of view, so as to give the student a good foundation in the principles of thermodynamics, in the solution of actual heat engineering problems. The course also includes a study of the simple, compound and multiple expansion steam engine, of the different types of gas engines, of the gas producer, of compressed air and refrigerator machines, and the methods of testing such machines.

235. Power Plant Equipment

Preparation: 230, taken simultaneously

This course is largely descriptive of the many appliances used in modern power plants. It includes a discussion of boilers and boiler accessories, ash and coal handling systems, the various types of engines, gas-engines, and turbines, with their valve gears and governing devices, condensers, feed-water heaters, etc.

236. Industrial Plants

Preparation: 235

This course covers the principles involved in the erection, installation and management of an industrial plant. A description of the different types of structures, with consideration of such details as foundations, walls, columns, floors, windows, etc., is followed by a discussion of the installation of the power plant and machinery. Principles of illumina-

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tion, fire-prevention, heating and ventilation, routing of materials, and the organization and management of a plant, are taken up. A design problem is given in connection with the course.

237. Foundry Practice

This is a lecture course, in which is studied the general principles and practice of pattern making, taking up a consideration of sands, tools, molds, cores, ramming, venting, facing, sprucing, risers, gating, use of chills, and simpler types of sweep molding.

240. Journals and Reports

This course consists of three hours a week of outside reading in standard engineering publications, with one hour per week for class discussion. The course is designed to acquaint the student with general engineering literature and to enable him to read intelligently discussions upon Mechanical Engineering Practice.

250. Engineering Laboratory

Preparation: 230

This course consists of exercises and tests upon the various forms of appliances in use in the power plant, such as:

1. Gauge test and calibration.
2. Slide valve setting.
3. Corliss valve setting.
4. Testing quality of steam by steam calorimeter.
5. Determine flow of steam through an orifice.
6. Steam engine indicator practice.
7. Test of a simple steam engine.
8. Test of a compound steam engine.
9. Study of a steam driven air compressor.
10. Test of a steam driven air compressor.
11. Series of tests on a Pelton water wheel.

Course III students omit exercises 2, 3, 8, 10, and 11.

SYNOPSIS OF COURSES

255. Testing Materials Laboratory

Preparation: 201

The work done by the students in the Testing Materials Laboratory includes tests to determine the elongation, reduction of areas, modulus of elasticity, limit of elasticity, yield point, ultimate compressive strength of metals, such as steel, cast iron, copper and brass; tensile and compressive tests on timber and concrete; tests to determine the deflection, modulus of elasticity, elastic limit, and ultimate transverse strength of steel and wooden beams, subject to transverse loads. Tests are also made on cement mortars to determine the strength of cubes and briquettes at different ages.

260. Standard Engineering Products and Processes

Preparation: 236

This course is intended to familiarize the student with the commercial names and sizes of engineering products, such as bar and plate stock, shafting, tubing, pipes, valves, bearings and hangers, belts, pulleys, etc. A discussion of such manufacturing processes as extrusion, broaching, press work, electric and oxy-acetylene welding, cold and hot rolling, and drawing, etc., is included.

300. Elements of Electrical Engineering

Preparation: 10, 20, and 400

This is the basic course in the professional work in electrical engineering and consists of a series of twenty-seven exercises during the second term of the first year. The subjects covered are: Fundamental ideas concerning electricity, currents of electricity, electromotive force resistance and Ohm's law, electrical work and power, electrical circuits, Kirchhoff's laws, principles and types of primary batteries, magnetism, electromagnetism, electromagnetic induction, self and mutual inductance, electrostatics, energy stored in the electromagnetic and electrostatic fields, and the single energy transient in direct current circuits. The practical units of measurement are discussed as the several quantities to which they apply are successively reached.

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301. Elements of Electricity

Preparation: 10, 20

This is a course of forty exercises in the second year taken by all students in the Civil, Mechanical, and Chemical Engineering Courses. It is intended to give the foundation for the subsequent electrical engineering work given these students. The subjects discussed are, for the most part, the same as those in Elements of Electrical Engineering (300), but the method of treatment is more qualitative and less quantitative.

310. Applied Electricity

Preparation: 301

This is a course of forty exercises through both terms of the third year for all students in the Civil, Mechanical, and Chemical Engineering Courses. The first term is devoted to a consideration of the various direct current machines and appliances, their characteristics and applications. In the second term alternating current apparatus is treated of in the same manner. Recitations and problem work are based largely on practical applications.

311. Applied Electricity Laboratory

Preparation: 301, 310 taken concurrently

This is a course of twenty laboratory exercises throughout the year, illustrating the characteristics and operation of direct and alternating current machinery discussed in the Applied Electricity Course. Emphasis is placed on consideration of the precision required in commercial work and students are encouraged to estimate the precision attained by the means available. A written report is required on each experiment and especial care is exercised that such reports be correct in matter and form.

320. Direct Current Machinery

Preparation: 11, 300

This course, which is given throughout the second year, consists of a series of lectures, recitations, and problems

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covering the general principles of direct current machines and practice. Beginning with a discussion of the magnetic properties of iron and the magnetic circuit, there is next taken up a general survey of the direct current dynamo. This is followed by an amplified discussion of the transients found in direct current inductive circuits leading to the study of armature windings, armature reactions and their compensation, commutation, generator and motor characteristics, efficiency, ratings, heating, and generator and motor testing.

In the later portion of the course the practical operation of direct current machinery is considered. Illustrative of this may be mentioned the subjects of parallel running, boosters and balancers, three wire systems, and storage batteries.

321. Direct Current Machinery, Laboratory

Preparation: 320 taken concurrently

This course of laboratory exercises running parallel with 320 is devoted to a carefully selected series of experiments intended to exemplify qualitatively and in the clearest manner the principles developed in the lecture course. The course opens with a few simple experiments intended to familiarize the student with the practical handling of ammeters, voltmeters, shunts, and millivoltmeters, and then involves a series of twenty experiments, of which the following may be mentioned as illustrative of the type of work:

The starting of a shunt motor, and starting devices.

The speed, field and voltage relations in a separately excited machine.

The heat test of a generator.

The characteristic curves of generators.

The parallel operation of shunt, and compound, generators.

The three wire balancer set.

The speed and torque curves of the series motor.

Satisfactory completion of twelve experiments is the minimum acceptable amount of work.

Since the purpose of the course is in part to develop correct methods of work, it is intended that the whole of the preparatory work, as well as the working up of the data obtained, shall be done in the laboratory under supervision of the instructor so far as necessary.

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322. Direct Current Testing, Laboratory

Preparation: 320 and 340, taken concurrently

This course, which runs throughout the third year (in alternating bi-weekly periods) concurrently with 331, is given over to the quantitative testing of direct current machinery and involves testing, of which the following may be considered typical:

Stray power test of generators and motors.

Prony brake test of a motor.

Machine efficiency by retardation methods.

Machine efficiency by electrical supply of losses.

Regulations testing.

Analysis of losses.

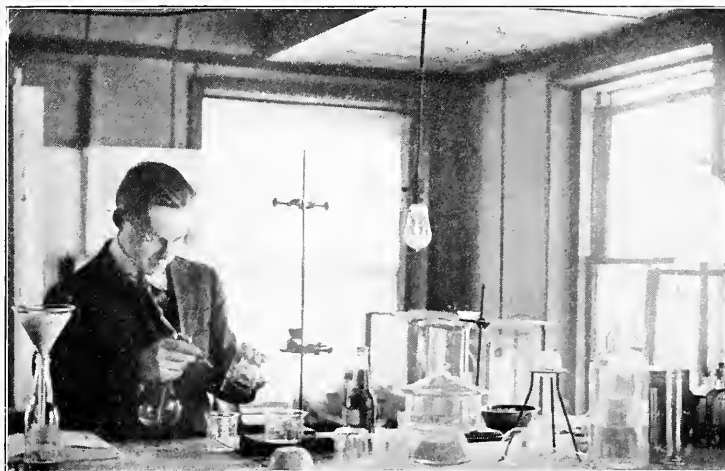
As the course progresses the student is thrown more and more upon his own resources; a desired result is stated to him, and he is required to plan out his own methods, settle upon the apparatus needed, solve his precision requirements, calibrate his instruments if necessary, and finally turn in a detailed report covering all phases of the work.

330. Alternating Currents

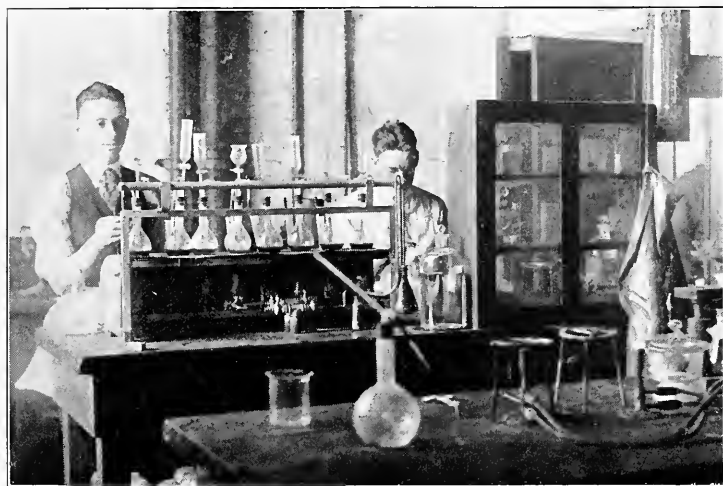
Preparation: 12, 13, 320

This course is given throughout the third year, and comprises lectures, recitations, and problem work upon the electromagnetic and electrostatic fields, variable, and alternating currents. Among the subjects covered are,—solution of linear differential equations of the first and second degree with constant coefficients leading to the general equation of current in any circuit, transients and the establishment of the steady state, consideration of the steady state when the electromotive force follows the equation $e=E \sin pt$. Harmonic alternating currents. Complex quantity, vector representation, topographic representation, symbolic representation. Application of the principles developed to all possible combinations of resistance, inductive and condensive reactances in both single and polyphase circuits. The course is emphatically mathematical, involving the use of both Fourier series and hypobolic functions, so that thorough comprehension of the

Chemical Engineering Students

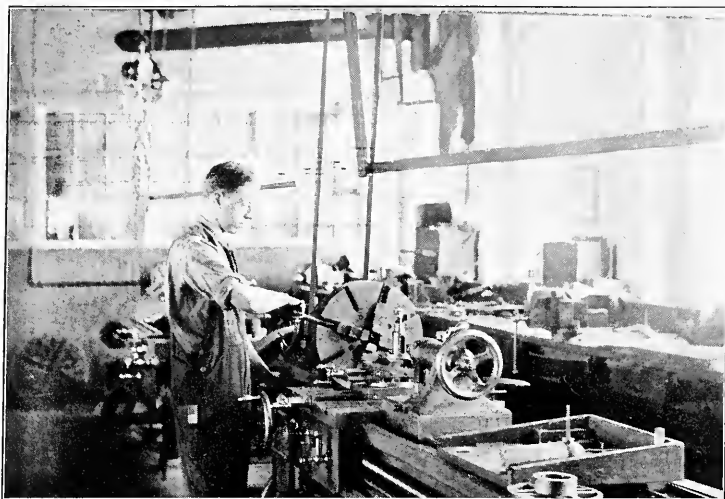


Analyzing Food
A. B. Werly Laboratories



Analyzing Steel
General Electric Company—Lynn

Mechanical Engineering Students



Machine Shop Work
Dennison Manufacturing Company—Framingham



Class in Drafting
Drafting Rooms

SYNOPSIS OF COURSES

preparatory mathematical subjects cannot be too strongly insisted upon. About two hundred problems are worked in class during the year.

331. Alternating Currents, Laboratory

Preparation: 330 and 340, taken concurrently

This is a course of laboratory exercises running throughout the third year (in alternating bi-weekly periods) concurrently with 322, and designed to elucidate practically the principles developed in the parallel course on Alternating Current 330, also to train the student in the use of special types of instruments to be used later in the laboratory work upon Alternating current machinery. Illustrative experiments are:

The study of AC series and parallel circuits, resonant conditions.

The effect of frequency change on circuit constants.

Paralleling of AC machines, synchronizing and changing load.

Determination of power factor in various circuits.

Power measurement in polyphase circuits.

340. Electrical Measurements

Preparation: 25, 300, 321

This course, given during the third year, consists of two parts; the first being intended to familiarize the student with the principal types of measuring instruments used in both commercial work and the standardizing laboratory of the Supply Company, the manner of their use, sources of error, etc.; the second, giving the principles of the fundamental methods of measuring the several electrical quantities—Resistance, Current, Electromotive Force, Capacity, Inductance, Power, and Energy.

341. Electrical Measurements, Laboratory

Preparation: 340

This course, given during the third year and running parallel with 340, consists of a series of experiments intended to bring out the principles therein developed, and involving such

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matters as the determination of Specific Resistance, Insulation Resistance, Conductivity, Magnetic Induction, Electrostatic Capacity, and the use of special apparatus, such as the Kelvin Bridge, Cary-Foster Bridge, Potentiometer in the calibration of voltmeters and ammeters, etc.

Particular stress is laid on the correct use of apparatus and methods, and precision discussions are required throughout.

350. Alternating Current Machinery

Preparation: 340

This is a course of lectures, recitations, and problems devoted to a careful, thorough, and detailed discussion of the construction, theory, operating characteristics, and testing of the various types of alternating current machinery. One two-hour period a week is spent in the solution of numerical problems.

351. Alternating Current Machinery Laboratory

Preparation: 330, 350, taken concurrently

This is a laboratory course to accompany the course in Alternating Current Machinery. Three laboratory exercises are held per week. The work includes tests on the heating, efficiency, and determination of the characteristics of the various types of alternating current machinery, such as transformers, generators, and motors. A detailed preliminary study is made of each assigned experiment, involving the theoretical principles, the method of procedure to obtain the required results, and the way in which the results should be worked up. This is embodied in a preliminary report. The student then does the necessary laboratory work to obtain the required data; and finally work up the whole into a detailed final report. No more assistance than necessary is given by the instructor, the initiative and resourcefulness of the student being depended on to a very large extent.

360. Generation, Transmission, and Utilization of Power

Preparation: 170, 201, 230, 320, 330, 350

This course, given six hours weekly throughout the fourth year, begins with a detailed study of the central station, both

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steam driven and hydroelectric, equally careful attention being given to the engineering and economic details, the influence of the various appliances upon the cost of power being kept constantly in view.

Following this comes a careful study of the high tension transmission line, the potentials used, spacing of conductors, line characteristics, losses, inductive effects upon neighboring circuits, quarterwave transmission surges, etc.

After this is considered the sub-station and equipment, and then follows a full discussion of distribution systems and the utilization of electrical power, especial attention being given to railway operation, and the matter of out-door and interior illumination.

Wherever necessary attention is called to the applicable requirements of the National Electrical Code and the specifications of the Bureau of Standards Electrical Safety Code.

The course closes with a brief discussion of the Public Utility in its relations to the Community served.

370. Advanced Electricity

This course consists of two parts. It is given throughout the fourth year and in the first term comprises a full descriptive discussion of modern electrical theory. Beginning with the state of electrical science in the time of Franklin the development of the science is traced through the work of Faraday, Maxwell, Hertz, and Kelvin on the one hand; of Weber, Crookes, J. J. Thomson, Millikan and others on the other. The subjects of metallic, electrolytic and gaseous conduction are discussed, together with ionization and the theories of electromagnetic mass and the electrical constitution of matter.

In the second term, the matter of electromagnetic radiation is considered, the propagation of waves in space and along wires and a detailed discussion of the subject of transients in modern transmission systems, together with the theory of radio transmission of energy.

400. Inorganic Chemistry

This is a course of two lectures and two recitations each week throughout the entire year. The fundamental principles of the science are taught by means of experimental lec-

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tures. Topics of a broad general character are taken up in the first part of the course, in connection with the descriptive chemistry of the non-metallic elements, followed later by more specialized work in connection with the elements.

Recitations will include a short written quiz on the two lectures of the week. Special attention is given to chemical calculations based on practical application.

401. Inorganic Chemical Laboratory

This is a laboratory course of six hours per week throughout the year. The object of the course is to cultivate scientific attitude and habit of thought on the part of the student and to increase his power of acquiring knowledge, whether it be from book, lecture, or from experiment. The experiments are planned to illustrate the topics which have been discussed in the lecture room. Careful manipulations, thoroughness in observation, accuracy in arriving at conclusions, are required of each student. In this as in all subsequent laboratory work neat and satisfactory notes will be considered an essential part of the work.

402. Chemistry

This is a course in inorganic chemistry, consisting of three class exercises per week. The course is designed to meet the needs of students in non-chemical courses, and will include a brief discussion of the general principles of chemistry as applied to engineering, with the idea of illustrating the applications of chemistry to special lines of engineering work.

410. Qualitative Analysis

Preparation: 400, 401

A course of two class exercises a week throughout the entire year. The course is designed not merely to consider the procedures used in the detection of the common elements but to deal in a much broader way with the principles involved in chemical analysis and to broaden the student's knowledge of inorganic chemistry especially the chemistry of the metallic elements. In the latter part of the course questions

SYNOPSIS OF COURSES

involving the analysis of unusual mixtures will be discussed with especial emphasis on the interpretation of analytical results.

411. Qualitative Analysis Laboratory

Preparation: 410

A laboratory course of 6 hours per week throughout the year. After a series of preliminary experiments illustrating principles and giving opportunity for practice in writing equations, the analysis of unknown substances is undertaken beginning with solutions and simple salts and later analyzing minerals, pigments, slags, alloys and various commercial products as boiler compounds, cleaning powders, glass, enamels and similar inorganic substances.

420. Quantitative Analysis

Preparation: 410, 411

A course of eighteen class exercises dealing with the general principles of quantitative analysis. Half of the time is devoted to the consideration of typical methods in gravimetric analysis as the determination of chloride in salt, the analysis of ferrous sulphate for iron and the sulphate, the complete analysis of brass and other analysis involving general principles of procedure. The other half of the time is devoted to the methods of volumetric analysis as illustrated in the use of acid and alkali determinations, oxidation methods involving bichromate, permanganate and iodine and the methods of volumetric precipitation. Special attention is given to chemical calculations and the solution of numerous analytical problems is one of the most essential features of the course.

421. Quantitative Analysis Laboratory

Preparation: 420

A course of analytical practice of six hours per week in the first term of the third year illustrating the methods discussed in 144. The calibration of burettes, the use and care of analytical balances and a limited number of typical gravi-

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metric and volumetric analyses are included in the course in which great stress is laid on the accuracy, care and integrity necessary for successful quantitative work.

430. Technical Analysis

Preparation: 420, 421

This course of two hours per week throughout the second term of the third year is a continuation of Course 144 but will deal more specifically with the methods of testing used in connection with industrial operations. It will include the rapid methods for steel, the analysis of boiler waters, gases, fuels, oils, paints, varnishes and similar substances.

431. Technical Analysis Laboratory

Preparation: 430

This course of six hours per week in the second term of the third year is designed to illustrate by a limited number of analyses the technical methods of quantitative analysis. Problems will be assigned individually depending on the student's future plans or his inclination and will be selected from the fields of steel analysis, gas and fuel analysis including calorific testing, water analysis, the study of pigments, soaps or in general in the analysis of that class of materials in which the student is most interested.

440. Organic Chemistry I

Preparation: 420, 421

This is a course of three class exercises per week throughout the third year. The lectures will deal with the underlying principles and theories of organic chemistry, the methods of preparation, and characteristic reactions of carbon compounds. The important organic compounds will be considered in detail, because they serve as the most convenient examples for illustrating fundamental principles which elucidate the chemical character of substances which are of practical importance.

SYNOPSIS OF COURSES

441. Organic Chemical Laboratory I

Preparation: 440

This is a course designed to familiarize the student with the operations and apparatus, and the different kinds of laboratory technique involved in organic work, such as fractional distillation, extraction, crystallization, steam distillation, determinations of melting points, boiling points, and the like. It deals also with general methods of preparation, such as etherification, saponification, sulphonation, diazotization, etc.

The student will prepare a number of compounds, including nitro-benzene, aniline, ethers, phenols, and other typical organic substances.

442. Organic Chemistry II

Preparation: 440

This is a continuation of Course 440, but designed to lay special emphasis on the industrially important organic compounds, their preparation, technical uses, and methods of identification. The latter part of the course, which requires two hours per week throughout the first year, will be carried out as a seminar, the work consisting of reading in books, journals, and patent literature, followed by reports and discussions.

443. Organic Chemical II Laboratory

Preparation: 442

This is a course of six hours per week throughout the first term. It consists of preparations and reactions of typical organic substances and will include the methods of separation and identification of simple mixtures. The instruction also includes a study of the qualitative tests for the important elements occurring in organic compounds and quantitative determinations of carbon, hydrogen, and nitrogen.

450. Industrial Chemistry

Preparation: 410, 420, 430, 440

This course consists of a series of lectures and recitations upon the more important technical chemical processes. Much attention is given to the general operations common to many

CO-OPERATIVE SCHOOL OF ENGINEERING

industries, such as crushing, grinding, lixiviation, filtration, evaporation, distillation, crystallization, etc., and to the details of various types of apparatus used for carrying on these processes. Some of the more important manufacturing industries, such as the production of alkali, fertilizers, glass, pigments, cement, soap, explosives, paper, as well as wood distillation, the refining of petroleum, etc., are also considered in detail.

451. Industrial Chemical Laboratory

Preparation: 450

This is a course in the quantitative study of the preparation and purification of a small number of chemical products, selected as types of reactions of industrial importance. The processes employed are carefully controlled and the final products are analyzed to determine their purity. When the work is completed, a careful detailed report of each process is made and discussed in class.

470. Theoretical Chemistry

Preparation: 400, 410, 420

In this course the more important principles of Theoretical Chemistry are considered; but these are treated with great thoroughness and are illustrated by applying them to a large variety of problems. The principles are further illustrated by lecture experiments. During the course the following subjects are considered: Pressure volume relations of gases and solutions, derivation of molecular and atomic weights, conductivity of solutions, ionic theory and mass action law, effect of temperature on chemical equilibrium, the laws of energy with reference to the production of heat and work, the electromotive force of voltaic cells and other electro-chemical topics.

471. Theoretical Chemistry Laboratory

This course comprises a series of exercises to give the student a knowledge of the methods employed in molecular weight determinations and in studying the important properties of solutions. Especial emphasis is laid on the underlying principles upon which all work of this character is based.

Civil Engineering Students



Locating Edge Stones
Whitman and Howard, Civil Engineers

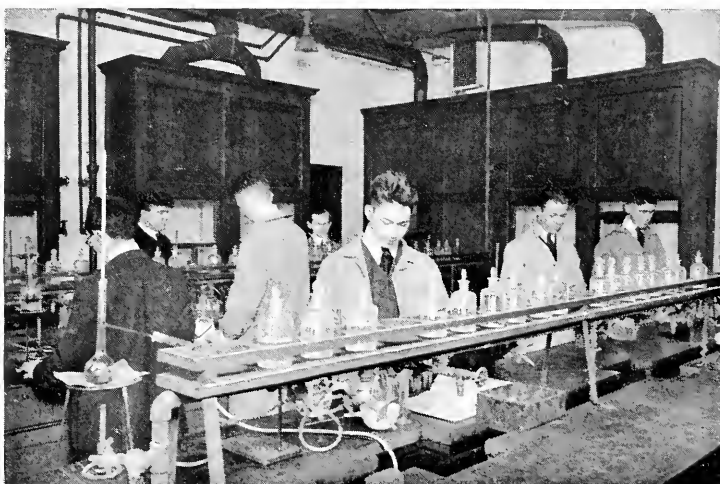


Making a Stadia Survey
Class in Surveying Fieldwork

Chemical Engineering Students



Testing Milk
Boston Bio-Chemical Laboratory



Class in Quantitative Analysis
Chemical Laboratory

SYNOPSIS OF COURSES

480. Experimental Problems

This course is given ten hours per week during the second term of the fourth year. The time is devoted to the study of one or more problems of limited scope throughout original investigation. The problem may be chosen in inorganic, organic, or physical chemistry subject to the approval of the instructor in charge of the course. The object of this course is to give the student an opportunity for planning and carrying out research work and differs from a thesis simply in that the problem is less complex. A study of the literature of the subject to be investigated is an essential part of the course. A preliminary report of earlier work along the same lines with an outline of the experimental work to be undertaken is to be submitted before work in the laboratory is begun.

A conference of one hour per week is held with the work in the laboratory. Each student will be expected to make at least two reports on the problem with which he is working, the first of which will deal with his plan for the work and the later one with his results.

485. Elementary Photography

This is a brief lecture and laboratory course, intended to familiarize the student with the fundamental principles and operations of photography. The construction and operation of the more common types of plate and film cameras are explained, and a few representative plates, films, and printing papers discussed. The operations of exposing and developing are discussed in some detail, together with the making of positives, both upon paper and upon lantern slides. The laboratory work consists of taking, developing, and printing pictures under the supervision of the instructor. No previous knowledge of chemistry or photography is required. The course is given at the beginning of the second term, and is optional for any student in the School.

490. German I

This course is planned to give the student a knowledge of German grammar, as well as a working vocabulary of scientific terms. A study of grammatical forms, syntax and vo-

CO-OPERATIVE SCHOOL OF ENGINEERING

cabulary through composition exercises and rapid reading forms the basis of the work.

491. German II

Preparation: 490

A continuation of German I, in which the student is given full opportunity to extend his vocabulary of technical words, as well as to become familiar with technical books and scientific articles in the current German periodicals. The reading gradually becomes more difficult and considerable time is devoted to the syntax, idioms and synonyms of the language.

By the end of the course students should be able to read understandingly any ordinary article of a popular scientific nature, to understand spoken German and to express simple thoughts in German.

500. Engineering Conferences

An informal conference course of one hour per week, taken by every student in the School during the third and fourth years.

The purpose of this work is to discuss in class, under the direction of an instructor, the various duties in Engineering Practice which the students perform with the several co-operating firms. By this means, each student is enabled to profit by the work of the others, and they all are guided toward a broader viewpoint of their duties, and the relation of their individual work to that of the concern as a unit. Such subjects as problems in methods of manufacture, transportation, management, and distribution of charges, are all considered in this course.

510. Engineering Practice

This course covers the work in practical engineering which the student gets with his employing firm. The exact duties performed vary with the different courses, and also vary with the firm. The students receive grades in this work and the grades received are regularly noted on the report cards which are sent out.

SYNOPSIS OF COURSES

520. Summer Reading

A summer course of reading has been established by vote of the Faculty in order to enable our students to become familiar with general and cultural subjects outside their special fields. For detailed information, including the lists of books recommended, see the special circular on Summer Reading, which may be obtained on application at the Dean's office.

CO-OPERATIVE SCHOOL OF ENGINEERING

SUBJECTS OF INSTRUCTION

(Alphabetically arranged)

SUBJECT	No.	Course	Year	Term	Hours	Preparation
Advanced Electricity	370	III	4	1&2	2-2	340, 350
Alternating Currents	330	III	3	1&2	5-5	320
Alternating Currents Laboratory	331	III	3	1&2	6-3	330
Alternating Current Machinery	350	III	4	1&2	6-6	330
Alternating Current Machinery Lab.	351	III	4	1&2	6-3	350
Applied Electricity	310	I, II, IV	3	1&2	2-2	310
Applied Electricity Laboratory	311	I, II, IV	3	1&2	3-2	311
Applied Mechanics	200	I, II, III, IV	2	1&2	3-4½	12, 13, 20, 22
Chemistry	402	I, II, III	3	1st	3-3	.....
Chemical Engineering	460	IV	4	1&2	3-3	.....
Concrete Design	151	I	4	1&2	3-0	150
Concrete Structures	150	I	4	1&2	2-2	101
Descriptive Geometry I	42	I, II, III, IV	1	1&2	4-1	.....
Descriptive Geometry II	43	I, II	2	1&2	2-0	42
Direct Current Machinery	320	III	2	1&2	4-4 5-5	300
Direct Current Machinery Lab.	321	III	2	1&2	7-0	320
Direct Current Testing Lab.	322	III	3	1&2	6-3	321, 3
Electrical Measurements	340	III	3	1&2	2-2	25, 300, 321
Electrical Measurements Lab.	341	III	3	1&2	3-3	340
Elements of Electricity	301	I, II, IV	2	1&2	2-2	10, 20
Elements of Electrical Engineering ..	300	III	1	2nd	3-3	10, 20, 400
Engineering Conferences	500	I, II, III, IV	3&4	1&2	1-0	.....
Engineering Laboratory	250	II, III	4	1st	2-2	230
Engineering Practice	510	I, II, III, IV	2, 3, 4	1&2	Outside Work	.....
English I	1	I, II, III, IV	1	1&2	3-3	.....
Experimental Problems	480	IV	4	2nd	10-4	.....
Foundations	165	I	4	2nd	2-2	201
Foundry Practice	237	II	3	2nd	1-0	.....
Gen. Trans. & Utilization of Power.	360	III	4	1&2	4-6	.....
Geology	190	I, II, III, IV	3	2nd	2-2	.....
German I	490	IV	3	2nd	3-3	.....
German II	491	IV	4	1&2	3-3	490
Heat Engineering	230	I, II, III, IV	3	1&2	3-4½	12, 13, 201
Highway Engineering	112	I	3	1st	2-2	110
Hydraulics	170	I, II, III, IV	3	1&2	2-3	201
Hydraulic Engineering	174	I	4	1st	3-3	170
Industrial Chemistry	450	IV	4	1&2	3-3	410, 420, 430, 440
Industrial Chemistry Lab	451	IV	4	1&2	6-0	450
Industrial Plants	236	II	4	1&2	6-64-4	235
Inorganic Chemistry	400	III, IV	1	1&2	4-4	.....
Inorganic Chemistry Lab.	401	IV	1	1&2	6-0	.....
Machine Designs, Statics and Dynamics	225	II	4	1&2	9-6	201, 221, 230
Machine Drawing	221	II, III, IV	3, 2	1&2	9-0, 3-0	220
Materials	160	I, II, III	4	1st	6-0	201
Mechanical Drawing	40	I, II, III, IV	1	1&2	6 or 9-0	.....
Mechanical Engineering Drawing	220	II, III, IV	2	1st	3, 6, 9-0	40, 210

* First term only.

SUBJECTS OF INSTRUCTION

SUBJECT	No.	Course	Year	Term	Hours	Preparation
Mechanism.....	210	I, II, III, IV	2	1st	3-3	.....
Mathematics I a	10	I, II, III, IV	1	1&2	6-6	.....
Mathematics I b	11	I, II, III, IV	1	1&2	6-6	.....
Mathematics II a	12	I, II, III, IV	2	1&2	5-5	.....
Mathematics II b	13	I, II, III, IV	2	1&2	5-5	.....
Organic Chemistry I	440	IV	3	1&2	3-3	420, 421
Organic Chemistry I Lab.	441	IV	3	1&2	6-0	440
Organic Chemistry II	442	IV	4	1&2	2-2	440
Organic Chemistry II Lab.	443	IV	4	1st	6-0	442
Physical Training	50	I, II, III, IV	1&2	1&2	2-0	.....
Physics I	20	I, II, III, IV	1	1&2	5-5	.....
Physics II	22	I, II, III, IV	2	1&2	3-3	20
Physics Laboratory	23	I, II, III, IV	2	1&2	2-2	20, 22
Plate Girder Design	132	I	4	1st	2-4	201, 130
Power Plant Equipment	235	II	3	1st	2-1	230
Precision of Measurements	25	II, III, IV	2	2nd	1-1	10, 11
Qualitative Analysis	410	IV	2	1&2	2-4	400, 401
Qualitative Analysis Lab.	411	IV	2	1&2	6-0	410
Quantitative Analysis	420	IV	3	1st	2-4	410, 411
Quantitative Analysis Lab.	421	IV	3	1st	6-0	420
Railroad Curves	110	I	3	1&2	3-4½	100, 101
Railroad Earthwork	110A	I	3	2nd	3-4½	110
Railroad Fieldwork and Drawing	111	I	3	1&2	6-0	110
Sanitary Engineering	180	I	4	2nd	3-3	170, 174
Standard Eng. Prod. & Proc.	260	II, III	4	2nd	3-4½	200
Strength of Materials	201	I, II, III, IV	3	1&2	3-4½	200
Structural Design	140	I	4	1&2	6-0	131, 132
Structural Drawing	120	I	2	2nd	3-0	.....
Summer Reading	520	I, II, III, IV	1, 2, 3			.....
Surveying I	100	I	1	1&2	2-3	10, 11
Surveying I, F. & P.	101	I	1	1&2	6-0	100
Surveying Field Work	101A	II, III	3	2nd	3-0	4 weeks
Surveying II	102	I	2	1&2	2-2	100, 101
Surveying II Field Work & Plot.	103	I	2	1&2	6-0	102
Technical Analysis	430	IV	3	2nd	2-4	420, 421
Technical Analysis Lab.	431	IV	3	2nd	6-0	430
Testing Materials Lab.	255	I, II, III	4	2nd	2-0	261
Theoretical Chemistry	470	IV	4	1&2	3-3 2-2	400, 410, 420
Theoretical Chemistry Lab.	471	IV	4	1st	3-0	.....
Theory of Structures I	130	I	3	2nd	3-4½	201
Theory of Structures II	131	I	4	1&2	6-12	130

CO-OPERATIVE SCHOOL OF ENGINEERING

REGISTER OF STUDENTS

Enrolled During the School Year 1918-1919

NAME.	COURSE.	HOME ADDRESS.
Abramson, Samuel	Ch. E.	Roxbury
Abromson, Harry P.	Ch. E.	Cambridge
Abromson, Onne	Ch. E.	Cambridge
Adams, Rollin P.	C. E.	Brookline
Akerman, Augustus E.	M. E.	Dorchester
Albert, Samuel	E. E.	Beverly
Allen, Earle C.	C. E.	Holbrook
Allen, Harold B.	C. E.	Ayer
Allen, Homer R.	C. E.	Concord Junction
Allen, Ralph E.	M. E.	Belmont
Alves, John J., Jr.	M. E.	Provincetown
Angeley, Richard M.	E. E.	Abington
Arnold, Harold P.	Ch. E.	West Hanover
Atkinson, Ralph L.	Ch. E.	Dorchester
Bailey, Percy W.	E. E.	Kingston
Baker, Chester P.	Ch. E.	Brockton
Baker, Clifford D.	M. E.	Beverly
Baker, David A.	M. E.	Boston
Ball, Warren A.	C. E.	Springfield
Ballou, George D.	C. E.	Dorchester
Barry, Frederick L.	Ch. E.	Holliston
Bashian, Aram	C. E.	Lexington
Baxter, Charles E.	E. E.	Dalton
Beatey, Horace G.	Ch. E.	Dorchester
Beckwith, Roswell C.	Ch. E.	Roslindale
Behrens, Frank K.	E. E.	Milford
Belcher, Horace E.	E. E.	Winthrop
Bell, Thomas J.	E. E.	Newburyport
Belson, Abraham S.	C. E.	Roxbury
Bernard, Raymond M.	M. E.	West Newton
Bertelsen, Christian	E. E.	East Boston
Bertram, Herbert J.	E. E.	South Boston
Bessom, Ralph E.	M. E.	East Lynn
Blackwell, Lawrence F.	M. E.	Plainville
Blair, Allie C.	E. E.	Montpelier, Vt.
Blake, Donald R.	Ch. E.	Wollaston
Boyd, Thomas P.	M. E.	Chelsea
Boys, George W.	M. E.	Killingly, Conn.
Bradbury, Raymond J.	M. E.	New Britain, Conn.
Bradstreet, Raymond B.	Ch. E.	Middleton
Bray, Lewis E.	M. E.	Everett
Britchky, Hyman	Ch. E.	Foxboro
Brooks, Francis W.	M. E.	Belmont
Brown, Carl N.	C. E.	Salcm
Brown, Leroy E.	C. E.	Woodsville, N. H.
Brown, Martin	M. E.	Boston
Brown, Ralph E.	E. E.	Rockland
Brown, Richard B., Jr.	E. E.	Plymouth

REGISTER OF STUDENTS

NAME.	COURSE.	HOME ADDRESS.
Brown, Percival O.	Ch. E.	West Medford
Brown, Philip	Ch. E.	Foxboro
Burgess, Rosslyn F.	Ch. E.	Atlantic
Burhoe, Paul E.	E. E.	Ashland
Burton, Charles E.	C. E.	South Ashfield
Butterfield, Fisk H.	E. E.	Ayer
Calkin, Maynard S.	Ch. E.	Somerville
Callanan, Herbert A.	M. E.	Danvers
Cameron, Maurice	E. E.	Cambridge
Capen, Bernard H.	Ch. E.	Stoughton
Carbee, Charles F.	C. E.	Dorchester
Carl, James W.	M. E.	Cambridge
Carlsen, Fred H.	E. E.	Gloucester
Carter, Curtis S., Jr.	E. E.	Haverhill
Carter, Rupert A.	C. E.	Haverhill
Cavagnaro, Robert V.	E. E.	Orient Heights
Chase, Benjamin A.	E. E.	Marblehead
Chase, Charles S.	E. E.	Leicester
Chase, Chester R.	M. E.	Wenham
Cheney, Norman E.	M. E.	Brockton
Chinn, Pembroke B.	M. E.	Boston
Chopas, Harry P.	E. E.	Roxbury
Clarke, Kenneth O.	E. E.	Kingston
Clary, James M.	M. E.	Beverly
Clements, G. F.	C. E.	Somerville
Cloy, Robert C.	Ch. E.	Roxbury
Coakley, Bernard J.	M. E.	Nahant
Cohen, Hyman	C. E.	Allston
Colbert, Daniel H.	C. E.	Marblehead
Collier, Arthur M.	Ch. E.	Salem
Collins, Desmond M.	M. E.	Boston
Collins, Norman R.	M. E.	Belmont
Cone, James H.	E. E.	Chester, Conn.
Conkey, James O.	E. E.	Hardwick
Cook, Harold S.	C. E.	Dorchester
Cooke, Howard W.	E. E.	Athol
Coombs, Seldon P.	Ch. E.	Medford
Cowdrey, Harry S.	M. E.	Auburndale
Craddock, Herbert J.	C. E.	Mayotown, Texas
Cramer, George W.	C. E.	Willimansett
Cressy, Dustin G.	E. E.	Bradford, N. H.
Cronk, Ansel B.	C. E.	Salem
Crosby, Gordon J.	C. E.	East Dedham
Cundari, Frank A.	C. E.	South Boston
Currier, Roland E.	M. E.	Tamworth, N. H.
David, Harold E.	M. E.	Amherst
Davis, Stuart S.	E. E.	Beverly
Day, James H.	M. E.	South Windham, Me.
Dearborn, Elmore L.	C. E.	Hampton, N. H.
Delano, Ellis R.	M. E.	Marshfield
Dennis, Francis F.	C. E.	Salem
D'Espinosa, William J.	Ch. E.	Norwood
Dexter, Harold S.	M. E.	Belfast, Me.
Dickens, James, Jr.	M. E.	Newburyport

CO-OPERATIVE SCHOOL OF ENGINEERING

NAME.	COURSE.	HOME ADDRESS.
Dietchman, Samuel	C. E.	Boston
Doane, Kendric P.	C. E.	Groveland
Dodge, Joseph N.	E. E.	Boothbay, Me. —
Doliber, Irving E.	C. E.	Marblehead
Donnell, Richard S.	E. E.	East Boston
Dottridge, Ernest O., Jr.	M. E.	Cotuit
Douglas, Edward F.	E. E.	Haverhill
Dow, Clarence M.	C. E.	Greenwood
Downey, Ralph S.	M. E.	Hingham
Downing, George S.	Ch. E.	Lynn
Dubinsky, Louis	C. E.	Waltham
Dunn, Raymond L.	C. E.	Lenox
Durkee, Lester	M. E.	South Hamilton
Eagles, Lloyd N.	C. E.	Harvard
Eaton, Richard E.	M. E.	Beverly
Eiffe, Raymond J.	Ch. E.	Salem
Engstrom, Howard T.	Ch. E.	Plymouth
Enos, Henry B.	C. E.	Dennis Port
Farley, Arthur W.	M. E.	Salem
Faunce, Lawrence S.	M. E.	East Rochester, N. H. —
Fearing, Edward W.	M. E.	South Weymouth
Fernald, Sydney W.	M. E.	Natick
Field, William S.	E. E.	Marlboro
Finn, Charles A.	M. E.	Holliston
Fitzgerald, Edward	C. E.	Boston
Flagg, Walter E.	E. E.	Wellesley
Flock, Adolph M.	E. E.	Roxbury
Foran, William F.	C. E.	West Newton
Foss, August S.	Ch. E.	Dorchester
Foster, Frank M.	C. E.	Roxbury
Fowler, Albert E., Jr.	Ch. E.	Newburyport
Fox, Frank S.	E. E.	Newburyport
Fraseri, George D.	E. E.	Boston
Frawley, Thomas E.	C. E.	Concord Junction
Frolio, Samuel	Ch. E.	North Wilmington
Frye, Richard F.	M. E.	Royalston
Frazee, John E.	Ch. E.	West Roxbury
Fullerton, Albert L.	M. E.	Roslindale
Gaffey, Francis J.	C. E.	Salem
Gallagher, Edward J.	E. E.	Atlantic
Ginder, Chester J.	C. E.	Everett
Girard, Armand L.	E. E.	Hudson
Gladding, Richard S.	Ch. E.	Beverly
Goldstein, Joseph	M. E.	Lynn
Gordon, Morris J.	Ch. E.	Boston
Gould, Joseph E.	Ch. E.	Boston
Goulet, Narcisse T.	Ch. E.	Pawtucket, R. I. —
Gove, Edwin W.	C. E.	Beverly
Greenberg, Edward	Ch. E.	Dorchester
Greenberg, Morris	Ch. E.	Dorchester
Griggs, John E.	C. E.	Metcalf
Gwinn, William A.	C. E.	Beverly
Gunther, Frederick E.	M. E.	Roslindale
Gustafson, George E.	M. E.	Arlington

REGISTER OF STUDENTS

NAME.	COURSE.	HOME ADDRESS.
Gustafson, Henry V.	Ch. E.	Dorchester
Haartz, Frederick H.	C. E.	North Scituate
Haddad, William W.	M. E.	Worcester
Hadjian, Sarkis	M. E.	Boston
Hale, Harold W.	C. E.	Swansea
Hall, Horatio V.	M. E.	Hudson, N. H.
Hall, Ralph P.	Ch. E.	Medford
Ham, George W., Jr.	M. E.	Dorchester
Hancock, Everett A.	Ch. E.	Revere
Harding, Arthur E.	C. E.	Lynnfield
Hartless, Robert B.	M. E.	Boston
Haswell, Percy D.	C. E.	Danvers
Hathaway, Chauncey D.	Ch. E.	Dorchester
Hawes, Arthur R.	Ch. E.	Sudbury
Hawkins, William H., Jr.	E. E.	Dorchester
Hayden, Leslie E.	Ch. E.	Winthrop
Hayes, Clifford R.	C. E.	Waltham
Heap, Edwin J.	Ch. E.	Atlantic
Heap, Sheldon S.	E. E.	Atlantic
Hendry, Herbert W.	E. E.	Quincy
Hendry, Irving S.	E. E.	Roslindale
Herrick, Edwin F.	M. E.	Dorchester
Hicks, Robert E.	E. E.	Glen, N. H.
Hills, Charles E., Jr.	E. E.	South Natick
Hochberg, Maurice S. N.	Ch. E.	Dorchester
Hodgkins, James P.	C. E.	East Lynn
Holland, Carl T.	E. E.	Nantasket
Holm, Alvin C.	C. E.	Gardner
Holthaus, Frederick J.	E. E.	Winthrop
Houghton, Ralph A.	M. E.	New Boston, N. H.
Howard, Harold R.	E. E.	South Boston
Howard, Paul F.	C. E.	Winthrop
Howell, Charles E.	E. E.	Watertown
Howley, Joseph P.	E. E.	Boston
Hulsman, David L.	Ch. E.	Everett
Imberger, Francis F.	M. E.	Jamaica Plain
Ingalls, George A.	E. E.	Danvers
Ireland, Theodore S.	M. E.	Gloucester
Jackson, Harold G.	M. E.	Somerville
Jackson, Walter H.	C. E.	Marlboro
Johnson, George E.	M. E.	Gorham, Maine
Jones, Archibald L.	E. E.	Middleton
Junior, Francis E.	C. E.	Plymouth
Kaseta, John A.	E. E.	Brockton
Keenan, Maurice E.	M. E.	Hartford, Conn.
Kelleher, James J.	C. E.	Salem
Kelleher, John P.	M. E.	Charlestown
Kelley, Thomas G.	C. E.	Roslindale
Kennedy, Walter A.	E. E.	Concord Junction
Kilborn, Henry R.	E. E.	East Weymouth
Kimball, Harry A.	Ch. E.	Salem
Klein, Walter J., Jr.	Ch. E.	Natick
Klumpp, Carl F.	Ch. E.	South Boston
Krantzman, Isadore	C. E.	Boston

CO-OPERATIVE SCHOOL OF ENGINEERING

NAME.	COURSE.	HOME ADDRESS.
Kunberger, Arthur E.	Ch. E.	Concord, N. H.
LaBree, Frank H.	E. E.	Dexter, Maine
Lamprey, Carroll A.	M. E.	Wolfeboro, N. H.
Landry, Herbert A.	M. E.	Norwood
Landry, Thurba W.	E. E.	Plymouth
Lappin, Harry	Ch. E.	Roxbury
Larson, William C.	M. E.	Worcester
Lawler, George H.	E. E.	Newburyport
Lawler, Robert G.	M. E.	Hartford, Conn.
Leahy, James F.	Ch. E.	Natick
LeBaron, John C.	Ch. E.	Middleboro
LeClair, William B.	C. E.	Waltham
Lee, Israel A.	E. E.	Salem
Lee, Jasper R.	C. E.	Orleans, Vt.
Levin, Marney	C. E.	Boston
Levine, Philip	C. E.	Chelsea
Levine, Samuel	M. E.	Roxbury
Levitan, Abraham	Ch. E.	Boston
Lewis, Ralph F.	Ch. E.	Provincetown
Locke, Richard B.	C. E.	South Boston
Love, Gerald G.	C. E.	Concord
Lovejoy, Richard P.	Ch. E.	Franklin
Lyle, David J.	E. E.	Gloucester
MacWilliams, Harold F.	C. E.	Newburyport
Madden, Joseph N.	C. E.	Salem
Magovern, Dwight H.	C. E.	Lunenburg
Mallion, George A.	Ch. E.	South Boston
Maloney, Edward F.	Ch. E.	Dorchester
Manning, Arthur L.	M. E.	Frammingham
Marcus, Jacob	Ch. E.	Winthrop
Marcus, Maurice	C. E.	Dorchester
Marinofsky, Joseph	M. E.	Frammingham
Marrs, Purinton F.	Ch. E.	Concord Junction
Marsh, Charles C.	E. E.	Newburyport
Marshall, Chester S.	E. E.	Greenwood
Martell, Charles S.	E. E.	Medford
Matteson, William H.	E. E.	Roslindale
Maurer, Reginald A.	C. E.	Brookline
McCrossan, John M., Jr.	C. E.	Fall River
McGrath, Francis P.	M. E.	Salem
McKay, George E.	C. E.	Dorchester
McKenne, Charles D.	M. E.	Everett
McLatchy, John C.	E. E.	Woburn
Mead, Carl E.	M. E.	Willimansett
Medeiros, Dennis F.	C. E.	Charlestown
Meister, Norman A.	C. E.	Sharon
Millea, William W.	E. E.	Salem
Miller, Isadore O.	C. E.	Chelsea
Mills, Clifton W.	Ch. E.	Boston
Morgan, Stuart H.	Ch. E.	Medford
Moulton, Charles L.	C. E.	Athol
Nelson, Conrad J.	C. E.	Beachmont
Nelson, Frederick C.	Ch. E.	Saugus
Nelson, George H.	M. E.	Boston

REGISTER OF STUDENTS

NAME.	COURSE.	HOME ADDRESS.
Nickerson, Clarence W.	M. E.	East Braintree
Nickerson, Darius M.	C. E.	West Harwick
Nixon, Arthur	M. E.	East Rochester, N. H.
Noble, Robert A.	E. E.	Rochester, Vt.
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Nyman, Chester L.	C. E.	Marlboro
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Pearson, Carl R.	C. E.	Winthrop
Peck, Warren H.	Ch. E.	Plymouth
Perkins, Theodore	M. E.	Waltham
Perry, Gilbert F.	C. E.	Putnam, Conn.
Perry, Norman W.	Ch. E.	Wilmington
Peters, Allen	Ch. E.	Teaticket
Peterson, Clarence A.	E. E.	Everett
Peterson, Vernon R.	M. E.	North Abington
Peterson, Waine	E. E.	Gloucester
Philpott, Arthur R.	E. E.	Beverly
Phipps, Chester D.	M. E.	Holliston
Pickard, Herbert P.	Ch. E.	Concord Junction
Pierce, Leon G.	E. E.	Everett
Pierce, Webster W.	Ch. E.	Quincy
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Pinsky, Samuel M.	M. E.	Medway
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Preble, Edwin G.	M. E.	Beverly
Rattray, William A.	E. E.	Wakefield
Read, Ellsworth W.	M. E.	Belmont
Redfield, Kendall A.	E. E.	Lynn
Rhoades, Clifford T.	C. E.	Bridgewater
Rice, Gordon A.	C. E.	Jamaica Plain
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Richards, Walter C.	C. E.	Weymouth
Richardson, Elmer H.	C. E.	Reading
Ricker, Karl P.	M. E.	Danvers
Robbins, Bertram B.	E. E.	Elmwood
Robbins, Percy A.	Ch. E.	Bridgewater
Robinson, Dexter T.	E. E.	Roslindale
Roscoe, Albert M.	Ch. E.	Medford
Rosen, Philip	Ch. E.	Dorchester
Rosenblatt, Irving	C. E.	Saxonville
Rounds, William J.	C. E.	Boston
Rowe, Lawrence V.	Ch. E.	South Portland, Me.

CO-OPERATIVE SCHOOL OF ENGINEERING

NAME.	COURSE.	HOME ADDRESS.
Sampson, Edward N.	E. E.	<i>Sharon</i>
Santis, Julius C.	C. E.	<i>Boston</i>
Sargent, Shaw D.	E. E.	<i>Newburyport</i>
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Scanlan, James R.	M. E.	<i>Roslindale</i>
Schaller, William A.	Ch. E.	<i>Salem</i>
Seavey, Herbert T., Jr.	E. E.	<i>Stoughton</i>
Shea, Francis G.	C. E.	<i>Dorchester</i>
Sherman, Thomas E.	E. E.	<i>New Bedford</i>
Shopneck, Henry P.	Ch. E.	<i>Boston</i>
Siegel, Edward	Ch. E.	<i>Somerville</i>
Sigel, Israel	Ch. E.	<i>Revere</i>
Silverman, Joseph	Ch. E.	<i>Dorchester</i>
Smeltzer, Harold E.	E. E.	<i>Norwood</i>
Smith, John B.	C. E.	<i>Hyannisport</i>
Smithies, Arthur E.	E. E.	<i>Chester</i>
Sokol, Herman	C. E.	<i>Chelsea</i>
Soteriades, Evangelos	C. E.	<i>Wakefield</i>
Southwick, Rollin W.	M. E.	<i>Nahant</i>
Southworth, Burton	E. E.	<i>West Stoughton</i>
Spear, Roger E.	C. E.	<i>Winthrop</i>
Sperl, Warren	Ch. E.	<i>Auburndale</i>
Spofford, Stephen E.	E. E.	<i>Everett</i>
Sprague, Lawrence E.	Ch. E.	<i>Lynn</i>
Spurling, Kenneth T.	C. E.	<i>Newburyport</i>
Standley, David	C. E.	<i>Beverly</i>
Standtke, Max	C. E.	<i>Brandenburg, Germany</i>
Staples, Merton T.	C. E.	<i>Danvers</i>
Sternberg, Simon	Ch. E.	<i>Boston</i>
Stewart, Arthur H.	M. E.	<i>Roxbury</i>
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Stowell, Preston D.	C. E.	<i>So. Weymouth</i>
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Sullivan, William H.	M. E.	<i>Salem</i>
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Toomey, John W.	C. E.	<i>Beverly</i>
Trachtenberg, Frank	C. E.	<i>Dorchester</i>
Tucker, Harold A.	E. E.	<i>Fitchburg</i>
Tupper, Arthur A.	C. E.	<i>Greenwood</i>
Turner, Burton G.	C. E.	<i>Eastport, Me. —</i>
Waldie, Peter M.*	Ch. E.	<i>Beverly</i>
Wallin, Carl G.	C. E.	<i>Allston</i>
Ward, Hubbard B.	M. E.	<i>Boston</i>
Wareham, William D.	C. E.	<i>Fall River</i>
Waugh, Leslie W.	E. E.	<i>East Boston</i>
Waugh, Stanley P.	Ch. E.	<i>East Boston</i>
Webb, Daniel I.	M. E.	<i>Boston</i>
Webber, George J.	E. E.	<i>Wilmington</i>

REGISTER OF STUDENTS

NAME.	COURSE.	HOME ADDRESS.
Weekes, Donald	M. E.	Belmont
Weeman, Albert H.	M. E.	South Windham, Me.
Weinberg, Benjamin	C. E.	Boston
Werth, Lloyd L.	M. E.	Rochester, N. Y.
Wheeler, Ernest F.	M. E.	Waltham
White, Theodore A.	Ch. E.	Abington
White, Walter G.	E. E.	West Ossipee, N. H.
Whittemore, Preston C.	E. E.	East Douglas
Wilder, Everett P.	E. E.	Hingham
Wilkins, Henry M.	C. E.	Marblehead
Williams, Charles I.	E. E.	Quincy
Winiewicz, Charles M.	Ch. E.	North Abington
Wolk, Samuel	M. E.	Waltham
Woodbury, Robert O.	E. E.	Beverly
Wright, Moses E., Jr.	E. E.	Newburyport
Young, Henry B.	C. E.	Brookline



NORTHEASTERN COLLEGE
CO-OPERATIVE SCHOOL OF ENGINEERING

Boston, Mass......19

To the Dean:

(Name in full).....

hereby respectfully applies for admission to the.....
Engineering Course of the Co-operative School of Engineering
for the school year 19 19 , and submits the following
data:

Name in Full.....

Residence..... *City, or Town*

State..... *Tel.*.....

Date of Birth..... *Age*.....

Parent's (father's) name.....

" " address

Graduate of *High School. Year*.....

If not a graduate, how many years were you in High
School?..... *When did you leave?*.....

Why did you leave?.....

Name of principal.....

If employed since graduation, what is name of em-
ployer?

Employer's address.....

Names and addresses of two other persons, not ministers, to
whom we may direct inquiries concerning you. (Give former
employers, if possible.).....

.....
Do you plan to complete the full four years' course?.....

Do you wish employment with a co-operating firm?.....

When do you wish to start practical work?.....

Where will you live during the school-year?.....

Weight..... *Height*.....

Have you any physical infirmities?.....

Is your general health good, fair, or poor?.....

Additional Remarks:

REMARKS

[The page contains faint horizontal lines, suggesting it was part of a lined notebook or document.]

NORTHEASTERN COLLEGE

SCHOOL OF LAW

Evening Sessions

Established in 1898; incorporated in 1904. Provides a four years' course in preparation for the Bar, and grants the Degree of Bachelor of Laws.

SCHOOL OF COMMERCE AND FINANCE

Established in 1907; incorporated in 1911. Offers three- and four-year courses leading to the degree of B.C.S. (Bachelor of Commercial Science) in Business Administration and Professional Accountancy. Any one passing the examination for advanced standing is enabled to complete either of the regular courses and secure the degree in three years. Special courses in addition to regular courses.

CO-OPERATIVE SCHOOL OF ENGINEERING

Day Sessions

Four-year courses in Civil, Mechanical, Electrical, and Chemical Engineering, in co-operation with industrial firms. Students earn while learning. Open to High School graduates.

EVENING SCHOOL OF ENGINEERING

Evening Sessions

A school offering four-year courses in Civil, Mechanical, Electrical, Chemical, and Structural Engineering.

SCHOOL OF LIBERAL ARTS

Evening Sessions

Beginning with the fall of 1916, courses of college grade in English, Mathematics, Science, History, and Education have been offered. Professors and instructors of New England colleges have been engaged. These courses are open to graduates of high schools and to others who can meet the entrance requirements.

For further information concerning any of the above schools or departments, address

NORTHEASTERN COLLEGE

316 Huntington Avenue, Boston, Massachusetts

**CO-OPERATIVE
SCHOOL OF
ENGINEERING**



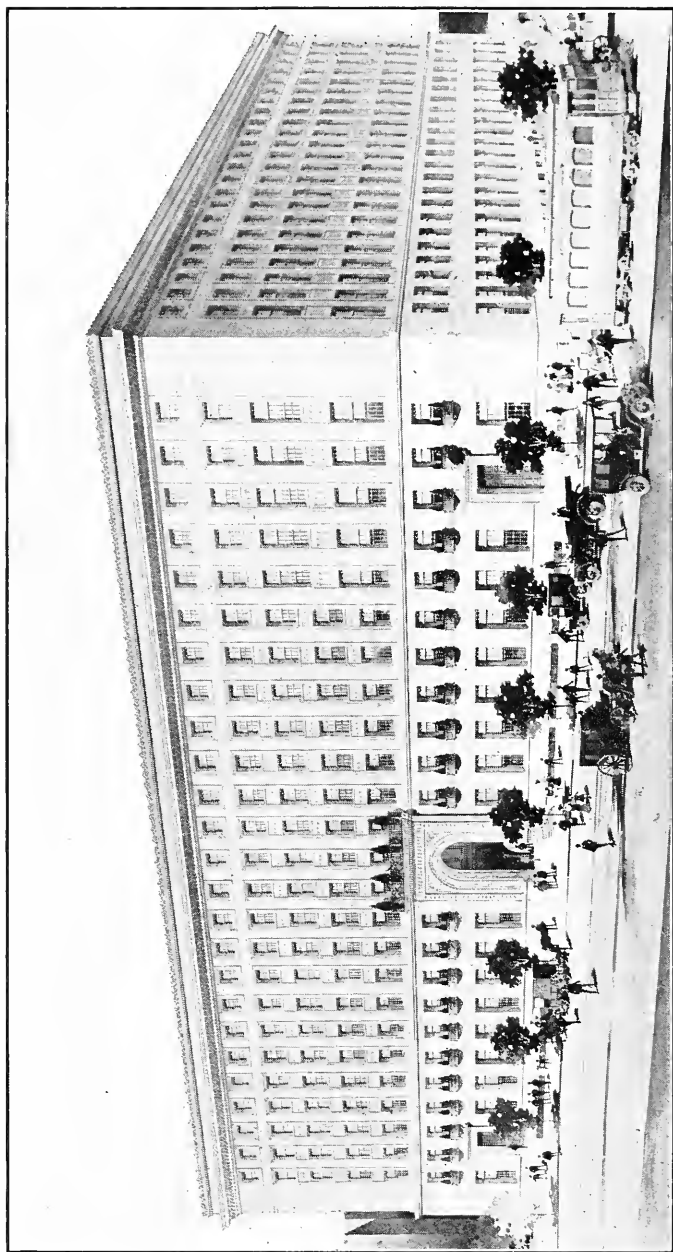
FOUNDED FOR THE INSTRUCTION
OF MEN IN THE THEORY AND
PRACTICE OF ENGINEERING

NORTHEASTERN
JUNE COLLEGE 1919

CATALOG OF THE
EVENING
SCHOOL OF ENGINEERING
1919-1920

PUBLISHED BY THE
TRUSTEES OF NORTHEASTERN COLLEGE
Boston Young Men's Christian Association
Number 316 Huntington Avenue, Boston, Massachusetts





THE ASSOCIATION BUILDING
Home of Northeastern College

Northeastern College

CATALOG OF THE Evening School of Engineering



1919 — 1920

316 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS

CALENDAR 1919-20

September 8-13

Registration

September 15

Opening of First Term

November 27

Thanksgiving Day (School exercises omitted)

December 20

End of First Term

December 22-27 inclusive

Christmas Recess

December 29

Opening of Second Term

January 1

New Year's Day (School exercises omitted)

April 3

End of Second Term

April 5-9 inclusive

Final Examinations

April 10

Close of School

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NORTHEASTERN COLLEGE

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G. F. ASHLEY

Mechanical Drawing

G. L. ATKINS, M.E.E.

Mechanical Engineering

J. C. BERQUIST

Mechanical Drawing

JAMES BROUGH

Freehand Drawing and Industrial Design

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Physics and Mathematics

P. W. DURKEE, B.S.

Electrical Engineering

F. D. LANE, S.B.

Mechanical Engineering

J. R. LEIGHTON

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EDWARD MUELLER, Ph.D.

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M. F. PINKHAM

Mathematics

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Mechanical Drawing

W. LINCOLN SMITH, S.B.

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ELWOOD B. SPEAR, Ph.D.

Chemical Engineering

SAMUEL A. S. STRAHAN

Chemical Engineering

GEORGE A. TRUELSON

Architecture

General Information

GENERAL INFORMATION

Many men in various lines of industry feel the need of special instruction in Engineering, either to advance in their normal occupation, or to enable them to change their positions and get into work of an Engineering nature.

To such men the Evening School of Engineering offers a wide variety of regular Engineering Courses, and in addition, special instruction for those who desire it, in Architecture, Drawing, Design, Radio Telegraphy and Concrete. The Engineering Courses require attendance three evenings a week, during a period of three years. While only the fundamental subjects are taken up, the courses compare very favorably with similar courses offered by the good technical schools.

Three-year Engineering Courses

Regular three-year courses, leading to a diploma, are offered in the following branches of Engineering:

- I Civil Engineering
- II Mechanical Engineering
- III Electrical Engineering
- IV Chemical Engineering
- V Structural Engineering

Special Courses

Special courses in Architecture and Radio Telegraphy are offered by the School, and will be found described in detail in the latter part of this catalog.

Requirements for Admission

The work carried on in the Engineering Courses assumes that the entering student has had previous training in Elementary Algebra to quadratics, Plane Geometry, and has a good ground-work in English. An entering student should have completed at least the equivalent of from one to two years' work in a good high school. Those who have completed a full high-school course should be well fitted to carry on the courses and derive the maximum benefit from the work.

The men who finished grammar school, but who have not had the requisite previous training in Mathematics and Eng-

Evening School of Engineering

lish, can attend the Evening Courses of the Northeastern Preparatory School, and should be able to get the necessary preparation for entrance to the Engineering School in from one to two years.

There are no entrance examinations for entering students, but each applicant for admission is required to have an interview with the Dean or the Director.

The qualifications of each applicant will be ascertained and he will be advised as to just what work he is qualified to undertake.

Should a student prove to be unable to carry on his studies successfully, he may be required to discontinue any subject in which he is deficient, and complete such preparatory work as is deemed necessary, before being re-admitted to the subject in question.

Tuition Fees

For each of the regular three-year Engineering Courses the tuition fees are as follows:

The first year tuition in any full Course is fifty (50) dollars.

This amount, which includes membership in the Association, is payable as follows:

\$20.00 upon entering the School

\$15.00 November 15

\$15.00 January 15

The tuition fee for all years, except the first, is sixty dollars, which includes membership in the Association. This amount is payable as follows:

\$30.00 upon entering the School

\$15.00 November 15

\$15.00 January 15

The tuition fee for special courses will be found on page 36.

Refunds

Refunds will be granted in accordance with the regular rules of the College. In computing refunds, students shall be charged at the rate of three dollars per week for each week of school attendance, and in addition to this, shall be charged an extra five dollars, over and above this weekly rate. The date

General Information

of withdrawal of any student shall be the day on which the School receives formal notice of his intentions to leave.

Laboratory Fees

All students taking courses in the Chemical Laboratories are charged a laboratory fee of five dollars. This fee is payable in advance, does not cover breakage or destruction of apparatus, and will not be refunded.

An additional laboratory deposit of five dollars must be made before a desk will be assigned to a student. At the close of the school year the cost of equipment broken by the student or not returnable will be deducted from this amount and the balance refunded. Students failing to check up their desks upon leaving school will be charged one dollar extra.

Transfers

No student is permitted to transfer from one course to another without consulting the Dean or Director beforehand and receiving a transfer order, which must be presented at the School office for the proper transfer card.

Reports of Standing

An informal report of the students' standing is issued at the end of the first term, and a formal report, covering the year's work, is issued at the close of each year.

Positions Held by Graduates

The graduates of the School are in constant demand, and it may be said that those who complete one of the courses successfully can be sure of desirable employment in his chosen line.

Naturally the School does not guarantee to place its graduates in positions. This is not necessary since our graduates have no difficulty in finding places for themselves.

Special Students

A special student may take any subject, upon the approval of the Dean or Director, provided he has had the necessary preliminary training.

Evening School of Engineering

Scholarships

As an aid to worthy men who desire an education and are unable to pay the tuition fees, a limited number of scholarships has been provided, which will be granted by the Board of Governors, to whom application should be made. Students who can afford to pay are requested not to apply for this privilege.

Diplomas

Upon the satisfactory completion of any of the regular courses, the student is entitled to receive a diploma.

COURSES OF STUDY

GENERAL STATEMENT

The schedules of the various courses are given on the following pages. The first-year work of all courses is practically the same, with a few exceptions, which are made because of the need of the student for elementary training in his professional subjects.

The school year comprises twenty-eight weeks of class work, and one week of examinations. The twenty-eight weeks are divided into two terms of fourteen weeks each. The subjects in the Course Outlines on the following pages have been arranged by terms. Opposite these subjects will be found the number of periods of forty-five minutes each of class work, recitation, laboratory or the drawing room. The number in parenthesis, following the subject, is the number by which that subject is identified in the descriptive matter under "Subjects of Instruction."

When a student elects a course, he is required to complete all subjects in that course in order to receive a diploma. No subject is to be dropped, or omitted, without the consent of the Dean or Director.

Courses of Study

I. CIVIL ENGINEERING

The purpose of this course is to give the student an education in those subjects which form the basis of all branches of technical education, and a special training in those subjects comprised under the term "Civil Engineering." It is designed to give the student sound training, both theoretical and practical, in the sciences upon which professional practice is based.

Civil Engineering covers such a broad field that no one can become expert in its whole extent. It includes Topographical Engineering, Municipal Engineering and Railroad Engineering. It covers land surveying the construction of sewers, waterworks, roads and streets. All these branches of Engineering rest, however, upon a relatively compact body of principles, and in these principles the students are trained by practice in the class room, drawing room and the field.

The course is designed to prepare the young engineer to take up the work of assisting in the location and construction of steam and electric railways, sewerage and water supply systems, etc.

FIRST YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Algebra (1)	2	Trigonometry (4)	2
Geometry (2)	1	Logarithms and Slide Rule (3)	1
Practical Physics (8)	2	Practical Physics (8)	2
Practical Physics Problems (9)	1	Practical Physics Problems (9)	1
Mechanical Drawing (10)	3	Mechanical Drawing (10)	3
SECOND YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (5)	2	Calculus (6)	2
Surveying (11)	4	Surveying (11)	4
Topographical Drawing (12)	2	Topographical Drawing (12)	2
Highway Engineering (13)	1	Highway Engineering (13)	1
THIRD YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Practical Mechanics (16)	2	Practical Mechanics (16)	2
Hydraulics (27)	2	Strength of Materials I (17)	2
Railroad Engineering (14)	2	Railroad Engineering (14)	2
Railroad Engineering Drawing (15)	3	Railroad Engineering Drawing (15)	3

Evening School of Engineering

II. MECHANICAL ENGINEERING

This course is designed to give a foundation in those fundamental subjects which form the bases for all professional engineering practice, and especially to equip the young engineer with a knowledge of the various phases of Mechanical Engineering. The course embraces instruction by text-book, lecture and drawing room.

The course affords training in the methods, and gives practice in the process of Construction, which develops in the student the capacity for thinking along mechanical lines, thus enabling him to base all his work upon fundamental principles already learned, rather than upon empirical rules. It is the endeavor to give the student a good theoretical training and meanwhile devote sufficient time to the practical work, so that he may become a proficient engineer, both in theory and in practice in the various branches of Mechanical Engineering.

FIRST YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Algebra (1)	2	Trigonometry (4)	2
Geometry (2)	1	Logarithms and Slide Rule (3)	1
Practical Physics (8)	2	Practical Physics (8)	2
Practical Physics Problems (9)	1	Practical Physics Problems (9)	1
Mechanical Drawing (10)	3	Mechanical Drawing (10)	3

SECOND YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (5)	2	Calculus (6)	2
Practical Mechanics (16)	2	Practical Mechanics (16)	2
Materials of Construction (25)	2	Strength of Materials I (17)	2
Mechanical Engineering Drawing (22)	3	Machine Drawing (23)	3

THIRD YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Strength of Materials II (18)	2	Foundations (26)	2
Hydraulics (27)	2	Hydraulic Motors (28)	2
Thermodynamics (29)	2	Thermodynamics (29)	2
Machine Design (24)	3	Machine Design (24)	3

Courses of Study

III. ELECTRICAL ENGINEERING

Electrical Engineering has developed rapidly in recent years and students are required to have a thorough appreciation of physical theory, as well as a broad working knowledge of Mathematics. It is essential that students planning to take this course should realize the fundamental necessity of obtaining a solid grounding in these subjects.

It is not the purpose of the course to attempt the impossible aim of turning out fully trained engineers in the various branches of the science, especially as it is becoming daily more and more differentiated and specialized. The course is designed rather to lay a broad and thorough foundation for future progress along the lines of work which may particularly appeal to the individual, and give him a good working acquaintance with the essential principles which underlie each of the more specialized branches of professional activity. Parallel with the theoretical work, runs a carefully planned course of laboratory work which is intended to develop the student's powers of planning work for himself.

FIRST YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Algebra (1)	2	Trigonometry (4)	2
Geometry (2)	1	Logarithms and Slide Rule (3)	1
Practical Physics (8)	2	Practical Physics (8)	2
Practical Physics Problems (9)	1	Practical Physics Problems (9)	1
Mechanical Drawing (10)	3	Mechanical Drawing (10)	3
SECOND YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Geometry (5)	2	Calculus (16)	2
Practical Mechanics (16)	2	Practical Mechanics (16)	2
Direct Currents, Lectures (30)	2	Direct Currents, Lectures (30)	2
Direct Currents, Laboratory (31)	3	Direct Currents, Laboratory (31)	3
THIRD YEAR			
FIRST TERM	Periods per week	SECOND TERM	Periods per week
Alternating Currents, Lectures (32)	2	Alt. Currents, Lectures (32)	2
Alternating Currents, Laboratory (33)	3	Alt. Currents, Laboratory (33)	3
Hydraulics (27)	2	Hydraulic Motors (28)	2
Thermodynamics (29)	2	Thermodynamics (29)	2

IV. CHEMICAL ENGINEERING

The great industrial advance of recent years has placed the chemical industry in the front rank of progress. The most potent reason for this may be found in the replacement of the old rule-of-thumb methods with scientific methods.

Owing to keen competition, manufacturers have been compelled to utilize every product of their plants, and this has called for skilled chemical knowledge. The course in Chemical Engineering has for its purpose the training of students competent to take responsible places in the operation of industries based on chemical principles.

During their course many students are employed in chemical industries as gas manufacturing plants, chemical engineering companies, etc. They not only get an excellent training in the theory of such work at school, but also a knowledge of the commercial side of the industry as well.

The class work includes a training in Inorganic, Organic, Analytical and Theoretical Chemistry, which is accompanied by appropriate laboratory work.

FIRST YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Algebra (1)	2	Trigonometry (4)	2
Chemical Physics (7)	2	Chemical Physics (7)	2
Inorganic Chemistry, Lectures (34)	2	Inorganic Chemistry, Lectures (34)	2
Inorganic Chemistry, Laboratory (35)	3	Inorganic Chemistry, Laboratory (35)	3

SECOND YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Analytical Chemistry, Lectures (36)	2	Analytical Chemistry, Lectures (36)	2
Analytical Chemistry, Laboratory (37)	7	Analytical Chemistry, Laboratory (37)	7

THIRD YEAR

FIRST TERM	Periods per week	SECOND TERM	Periods per week
Organic Chemistry, Lectures (38) .	2	Organic Chemistry, Lectures (38) .	2
Organic Chemistry, Laboratory (39)	6	Organic Chemistry, Laboratory (39)	6

Courses of Study

V. STRUCTURAL ENGINEERING

The purpose of this course is to give the student a special training in those subjects comprised under the term "Structural Engineering." It is designed to give the student sound and thorough training in the science upon which professional practice is based.

Structural Engineering covers such a broad field that no one can become expert in its whole extent. It includes the design and construction of girders, columns, roofs, trusses, arches, bridges, buildings, walks, dams, foundations and all fixed structures and movable bridges. It includes also a knowledge of the relative merits of the design and construction of buildings, bridges and structures composed of the different materials used by the engineer, such as concrete, reinforced concrete, timber, cast iron and steel. Structural Engineering also includes cost accounting, plan reading and estimating.

The course is designed to prepare the young engineer to take up the work of assisting in the design and construction of structures; to undertake intelligently supervision of erection work in the field and general contracting.

FIRST YEAR			
FIRST TERM		SECOND TERM	
	Periods per week		Periods per week
Algebra (1)	2	Trigonometry (4)	2
Geometry (2)	1	Logarithms and Slide Rule (3)	1
Practical Physics (8)	2	Practical Physics (8)	2
Practical Physics Problems (9)	1	Practical Physics Problems (9)	1
Mechanical Drawing (10)	3	Mechanical Drawing (10)	3
SECOND YEAR			
FIRST TERM		SECOND TERM	
	Periods per week		Periods per week
Analytical Geometry (5)	2	Calculus (6)	2
Materials of Construction (25)	2	Strength of Materials I (17)	2
Practical Mechanics (16)	2	Practical Mechanics (16)	2
Structural Drawing (19)	3	Structural Drawing (19)	3
THIRD YEAR			
FIRST TERM		SECOND TERM	
	Periods per week		Periods per week
Strength of Materials II (18)	2	Foundations (26)	2
Theory of Structures (20)	4	Theory of Structures (20)	4
Structural Design (21)	3	Structural Design (21)	3

SUBJECTS OF INSTRUCTION

Instruction is given by lectures and recitations, and by practical exercises in the field, the laboratories and the drawing rooms. A great value is set upon the educational effect of these exercises, and they form the foundation of each of the courses. Text-books are used in many subjects, but not in all. In many branches the instruction given differs widely from available text-books and in most of such cases, notes on the lectures and laboratory work are furnished to the students. Besides oral examinations in connection with the ordinary exercises, written examinations are held from time to time. At the close of the year, general examinations are held.

In the following pages will be found a detailed statement of the scope of the subjects offered in the various courses. The subjects are classified, as far as possible, related studies being arranged in sequence.

The subjects are numbered, or numbered and lettered, for convenience of reference in consulting the various Course Schedules.

The requisites for preparation include not only the subjects specified by number, but also those required as a preparation for them. The reason for this is that to carry on properly the more advanced subjects, the student must have become proficient in all the elementary subjects. Some studies, specified as being required in preparation, may be taken simultaneously. The student must complete such subjects before starting on more advanced work.

By careful consideration of the Course Schedules, in connection with the following Description of Subjects, the applicant for a special course may select, for the earlier part of that course, such subjects as will enable him to pursue later those more advanced subjects which he may particularly desire.

The topics, included in the list which follows, are subject to change at any time by action of the School authorities.

Synopsis of Subjects

SYNOPSIS OF SUBJECTS

Regular Courses

1. Algebra

Preparation: Elementary Algebra

This course is taken by all regular students during the first term of the first year and consists of a general review of Algebra up to quadratic equations, and a continuation including quadratic equations, ratio and proportion, variation and the use of formulas, with applications to problems in Physics and Engineering.

2. Geometry

Preparation: Elements of Plane Geometry

This course is taken by all regular students during the first term of the first year. It consists of a rapid review of the useful theorems, with special reference to mensuration.

3. Logarithms and Slide Rule

Preparation: 1

In this course instruction is given in the theory of logarithms with thorough drill in their use, with applications to the solution of exponential equations, especially in formulas; the theory and use of Slide Rules, including a general discussion of precision and rules for significant figures.

4. Trigonometry

Preparation: 1, 2, 3

This course consists of lectures and recitations covering radians, coördinates, trigonometric ratios, formulas, law of sines, law of cosines, solution of right and oblique triangles, with applications to problems in Engineering.

5. Analytical Geometry

Preparation: 4

In this course instruction is given by lectures and recitations in the following subjects: Plotting of functions, interpolation, the straight line, the conic sections, curves represented by various equations of common occurrence in engineering, graphic solution of equations, determination of laws from the data of experiments, simplification of formulas.

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6. Calculus

Preparation: 4 and 5

This course is taken by all regular engineering students during the second term of the second year. Instruction is given by lectures and recitations in the following subjects: rate of change, differentiation, integration, definite integrals, with applications to the determination of mean value, area, volume, center of gravity and moment of inertia.

7. Chemical Physics

A course of experimental lectures and exercises, designed especially for students of Chemistry. The work is devoted to a study of the mechanics of solids, liquids and gases; heat and its effects; and elementary electricity. The problems are also planned to give drill work in Mathematics in its applications to Physics and Chemistry.

8. Practical Physics

Preparation: 1, 2

This course consists of two lectures per week throughout the first year. Instruction is given in the practical application of physical laws. Each lecture, so far as possible, is accompanied by practical tests in the lecture room on large-size apparatus, built especially for this course, so that the student may actually see a demonstration of the truth of the various laws, thus enabling him to grasp readily the underlying principles. The course is devoted to a study of the mechanics of solids, liquids and gases, heat and its effects, together with lectures on light and sound. Practical problems covering each phase of the work are given throughout the year, which are designed to fix in the student's mind the fundamental principles taken up in the lectures.

9. Practical Physics Problems

Preparation: 8

This course is taken by all regular students taking the course in Practical Physics (8), and is designed to give a more thorough understanding of the application of the principles discussed in the lectures to the solution of problems.

Synopsis of Subjects

10. Mechanical Drawing

This course is of an elementary character, and is planned on the assumption that the student has had no experience in the use of drawing instruments. Instruction is given in the use of instruments, the T-square, triangles and French curves, and in the fundamental rules for making drawings. Simple geometrical constructions and the principle of orthographic projections are studied.

11. Surveying

Preparation: 4

The first term is devoted to a study of surveying instruments, the methods of making surveys, and the solution of problems in plane surveying.

In the second term, the methods used in topographic surveying, together with the problems relating thereto, are taken up in detail, as well as advanced and special problems in plane surveying. A study is also made of triangulation and barometric leveling.

Special emphasis is laid on the construction and use of the various kinds of maps and plans with which the surveyor should be familiar.

12. Topographical Drawing

Preparation: 10

This course is primarily designed to give training in the interpretation and drawing of topographical maps. It is devoted to the study of the different conventional signs employed, and each student is required to make a number of plates and to become reasonably proficient in the preparation of such maps. Particular attention is given to the study of contour maps with applications to the solution of problems.

13. Highway Engineering

Preparation: 11

The subjects considered in this course are the location, construction and maintenance of roads, street design and street drainage, sidewalks, pavement foundations and the construction, cost and maintenance of the various kinds of pavements, including asphalt, brick, cobble-stone, stone-block and wood-block, together with a discussion of the relative merits of these types of pavements.

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14. Railroad Engineering

Preparation: 11

This course consists of instruction in the computation and methods of laying out simple, compound, reverse and easement curves; frogs, switches and turnouts; the computation of earthwork by different methods, slope stakes, borrow pits and cross-section work.

15. Railroad Engineering Drawing

Preparation: 10, 14

From field notes, a map and profile of a preliminary survey for a railroad are plotted, the location is discussed and adjusted to the preliminary map. Other drawings involving the study of problems common to railroad practice are taken up. The course is supplemented by lectures.

16. Practical Mechanics

Preparation: 4, 7, 8

A course of lectures and recitations which comprise a study of the general methods and applications of statics, including the determination of reactions, stresses in frames, of distributed forces and center of gravity, moment of inertia and radius of gyration of plane areas and solids. Kinematics and dynamics are also taken up, including the equations for uniform and varying rectilinear motion, centrifugal force, work, power and kinetic energy.

17. Strength of Materials I

Preparation: 16

This course comprises a study of the strength of materials, mathematically treated. The subjects studied are: the stresses and strains in bodies subjected to tension, to compression and to shearing; common theory of beams, with thorough discussion of the distribution of stresses, shearing forces and bending moments; longitudinal shear, slopes and deflections, and the strength of shafts and springs.

18. Strength of Materials II

Preparation: 17

This is a continuation of Strength of Materials I in which a study is made of the combined stresses in beams subjected to

Synopsis of Subjects

tension and compression, as well as bending; also of the strength of hooks and columns, the design of riveted joints, and thin, hollow cylinders. A brief consideration of strains, and the relations of the stresses on different planes in a body, and the stresses in simple frames subjected to bending forces, is taken up in the latter part of the course.

19. Structural Drawing

Preparation: 10, 16

The course in structural drawing consists in the working out of various graphical problems of mechanics on the drawing board, drawing standard sections of structural steel shapes, structural details and the preparation of drawings, representing simple structures. The purpose of this course is to familiarize the student with detailed drawings and teach him where and how to dimension structural parts on working drawings.

20. Theory of Structures

Preparation: 18

This course consists of lectures, recitations and solution of problems. Instruction is given in the fundamental theory of structures, including the theory of beams, computation of reactions, moments, and shears for static and moving loads. The work in the classroom is supplemented by the solution of many practical problems in the drawing room.

21. Structural Design

Preparation: 19 and 20

The course in structural design consists of work in the drawing room. It is a continuation of the course in structural drawing given in the second year, and includes the execution of elementary structural design, taking up in a practical way the principles given in the course in Theory of Structures. Each student is given data for various problems, the designs for which he works out in the drawing room, making all necessary computations and executing all drawings necessary for the preparation of a complete design of a number of engineering structures.

22. Mechanical Engineering Drawing

Preparation: 10

This course is a continuation of Mechanical Drawing, and includes problems on the point, line and plane; projections

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of solids; single and double curved surfaces and their intersections by oblique planes; and practical applications of the principles studied.

The principles of Mechanism are also studied. The problem work takes up the design of pulleys, belts, gearing and gear teeth development, cams and quick return motions used in machine tools such as shapers, slotters and planers.

23. Machine Drawing

Preparation: 10, 22

The aim of this course is to teach the proper way of making the necessary dimensioned drawings for use in practice, good shop systems being adopted. The instruction includes the making of working detail and assembly drawings of machinery from measurements.

24. Machine Design

Preparation: 18, 23

This course aims to give the student practice in the application of theoretical principles previously studied and at the same time acquaint him with the many practical details which must be considered in design work. The problems taken up in the early part of the course are of a static nature, while the later problems involve dynamical stresses. The problems of the course vary from year to year, but the following are typical of the designs taken up: arbor press, hydraulic flanging clamp, crane, air compressor, punch and shear, stone-crusher, etc.

In each design the constructive details are carefully considered, with special attention to methods of manufacture, provision for wear, lubrication, etc. The work is based on rational rather than empirical methods, the student being required to make all calculations for determining the sizes of the various parts and all necessary working drawings.

25. Materials of Construction

Preparation: 8 and 16

This course consists of two lectures, or recitations during the first term of the second year, in the study of methods of testing and the strength of various materials used by the engineer. A detailed study is also made of the methods of

Synopsis of Subjects

manufacturing, properties and uses, of materials used in engineering work, such as lime, cement, concrete, brick, wood, stone, iron and steel.

26. Foundations

Preparation: 17 and 18

A course covering the method of construction and design of the various kinds of foundations used in engineering construction, together with a study of the bearing power of different kinds of soil.

27. Hydraulics

Preparation: 5

In this course both Hydrostatics and Hydrodynamics are discussed, and many practical problems are solved throughout the work. Under Hydrostatics, the pressures on submerged areas, together with their points of application, are studied; under Hydrodynamics, the flow of water through orifices, short tubes, nozzles, over weirs, and through pipes and open channels is taken up for discussion.

28. Hydraulic Motors

Preparation: 27

A series of exercises, mainly recitations devoted to a study of impulse wheels and reaction turbines, with reference to their proper construction, regulation and testing, and to the various sources of loss of energy in their operation. Practical problems relating to stream flow, storage and development of water power are considered.

29. Thermodynamics

Preparation: 5

This course is devoted to the study of the theory of perfect gases, thermodynamics and power plants. The use of steam and entropy tables and solutions of general problems in steam. Problems in heating and ventilation and lay-out of power plants are also studied.

30. Direct Currents, Lectures

Preparation: 8

A course of lectures, recitations and problem work during the second year, dealing with the fundamental laws and

Evening School of Engineering

properties of electric and magnetic circuits. The course is devoted to the study of the principles of direct-current machinery.

31. Direct Currents, Laboratory

Preparation: 30

This course of one evening per week is taken in connection with the corresponding classroom course in Direct Currents, and the experiments performed are intended to illustrate and supplement that work. Each student is required to furnish a complete report, including theory, method of procedure, results and conclusions on each experiment performed by him.

32. Alternating Currents, Lectures

Preparation: 30

A course of lectures, recitations and problem work during the third year, dealing with the principles of electromagnetism, electrostatics, variable currents and harmonic currents including both single-phase and polyphase circuits. A detailed study is made of the construction, theory and application of alternating-current machines.

33. Alternating Currents, Laboratory

Preparation: 31 and 32

This course of one evening per week is taken in connection with the corresponding classroom work in alternating currents, and the experiments performed are intended to illustrate and supplement that work. Each student is required to furnish a complete report, including theory, method of procedure, results and conclusions on each experiment performed by him.

34. Inorganic Chemistry

Preparation: 7

A course of experimental lectures on the fundamental laws and principles of inorganic chemistry. The work aims to familiarize the student with the properties and preparation of the following elements and their most important compounds: — oxygen, hydrogen, the halogens, sulfur, nitrogen, phosphorus, carbon, silicon, the alkali and alkaline earth groups, iron and aluminum. The course is to be taken in conjunction with 35.

Synopsis of Subjects

35. Inorganic Chemistry, Laboratory

Preparation: 34

A laboratory course in which the student is expected to verify and illustrate the facts and principles that have been discussed in the lectures. To be taken in conjunction with 34.

36. Analytical Chemistry, Lectures

Preparation: 34

A practical course in qualitative and quantitative analysis consisting of lectures relating to the separation and identification of the common metallic elements and the ordinary acids. The latter part of the year will be devoted to lectures and conferences on the fundamental principles of volumetric and gravimetric analysis.

37. Analytical Chemistry, Laboratory

Preparation: 36

This course in the laboratory is devoted to the separation and identification of common elements and acids in the laboratory. Each student is required to make a complete analysis of various mixtures, alloys and chemicals used in manufacturing. A study is also made of volumetric determinations involving the use and the standardization of burettes, pipettes and measuring flasks. The work includes alkalimetry, acidimetry, indicators, oxidimetry, iodimetry, chlorimetry.

38. Organic Chemistry

Preparation: 36, 37

The course is devoted to lectures and conferences on the principles of organic chemistry, as illustrated by the methane and benzene derivations.

39. Organic Chemistry, Laboratory

Preparation: 38

In this course the student is required to prepare in the laboratory a number of organic compounds, selected to show the characteristic reactions, and to give training in the practical separation and purification of organic substances. After this synthetic work, the students are given a practical course in organic analysis.

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Special Courses

40. Architectural Drawing I

An elementary course, including the fundamental principles underlying all kinds of mechanical and architectural drawing; geometrical problems; orthographic and isometric projections; classical moldings; Roman alphabet and roof problems.

In connection with this course the instructor will outline a course of reading in architectural history.

41. Architectural Drawing II

Preparation: 40

The orders of Architecture. Practical architecture and details of construction. In this course the student is taught the component parts of buildings. Typical details of construction are drawn to a large scale and in isometric projection.

42. Architectural Drawing III

Preparation: 41

This course covers the making of complete plans, elevations and working drawings of some elementary problem.

Special Students

Students desiring special work in Architectural Drawing not outlined above, should consult with the instructor.

43. Radio Communication

This is a lecture course with demonstrations, given three periods per week for fourteen weeks (the course being repeated during the second term of the School), covering the elementary theory of electricity, motors and generators as used in radio working, ether waves, oscillating circuits, transmitting and receiving apparatus, arrangement of circuits, etc., as applied to both telegraphic and telephonic communication.

44. Radio Code and Practice, Elementary

This course is given three evenings per week for fourteen weeks and is repeated during the second term. It is intended for men who have little or no acquaintance with the code, and

Synopsis of Subjects

aims to bring such men up to a receiving speed of at least fifteen words per minute. A knowledge of the various message forms and regulations is also taught, together with the working of the simple sending and receiving sets.

45. Radio Code and Practice, Advanced

This course is also given three evenings per week for fourteen weeks and is repeated during the second term. It is open only to men who can already receive at the rate of twelve words per minute and is intended to carry them up to a receiving speed of at least twenty-two words per minute. It aims to teach all that is necessary to make them accomplished, skilled operators.

Men taking the elementary course during the first half year and entering this course in the second half should by the end of the year be capable of excellent work.

In these two courses in Radio Code and Practice which are under the supervision of Mr. R. G. Porter, who was on the teaching staff of the U. S. Naval Radio School at Cambridge until its termination, use will be made of the methods of instruction developed by the officers of that school assisted by the Department of Psychology of Harvard University and which have proved exceedingly efficient. A chart of normal progress is mapped out, and each man's progress in receiving is plotted from week to week, so that each man knows whether he is gaining as he should or not, and it can be determined very quickly whether or no he can develop into a speedy operator.

46. Radio Laboratory

This course will be given in connection with the regular courses in electrical laboratory work, and will consist of experiments on motor and generator action, motor control and maintainance storage batteries, etc., covering those special matters which are essential and applicable to the intelligent care and operation of the electrical machines used in transmitting sets.

EQUIPMENT

The School is now housed in the new building of the Association, and has very exceptionally equipped quarters for carrying on the work of the Engineering Courses.

MECHANICAL ENGINEERING DEPARTMENT

Our steam engineering plant is completely equipped with meters, scales, indicators and all the necessary accessory equipment for making complete boiler tests, and determining the efficiencies of the various appliances used in generating power, heat and light for our new building. This places at the disposal of our classes a perfectly equipped, up-to-date engineering department, and gives them the means of carrying on boiler tests, determining the efficiencies of various fuels and oils, taking indicator diagrams, determining the efficiency of modern reciprocating engines and turbines when direct connected to generators, as well as renders them familiar with all the various auxiliary appliances of such a plant, as condensers, pumps, air compressors, etc. The students also have the use of the equipment of our Automobile School, thus having opportunity to study the most advanced ideas in gasoline engine practice.

CIVIL ENGINEERING DEPARTMENT

Field Instruments

For work in the field the Civil Engineering Department possesses various surveying instruments, representing the principal makes and types of instruments in general use. The equipment includes transits, levels, compasses, plane table outfits, Locke hand levels, flag poles, leveling rods, stadia rods, engineers' and surveyors' chains, steel and cloth tapes and other accessories. For higher surveying there is an aneroid barometer for barometric leveling, and a sextant reading to ten seconds for hydrographic surveying. The transits are equipped with neutral glasses and reflectors for astronomical observations.

There have recently been added to the equipment a Keuffel & Esser $6\frac{3}{4}$ " transit, a Buff & Buff $4\frac{3}{4}$ " Mountain transit, a

Equipment

Keuffel & Esser 18" Wye level, two surveyors' compasses and a Gurley Electric Current meter for hydraulic measurements, as well as all the miscellaneous apparatus necessary to equip the extra parties that the new instruments would accommodate.

The extent of the equipment and scope of the field work itself are designed to train the student's judgment as to the relative merits of the various types of field instruments.

Design and Drafting Rooms

The School possesses large, light and well-equipped drawing rooms for the carrying on of the designing and drafting, which form so important a part of civil engineering work. These rooms are supplied with lockers containing the drawing supplies, and files containing blue prints and photographs of structures that represent the best practice. Many of the prints and photographs are of structures erected in and about Boston.

ELECTRICAL ENGINEERING DEPARTMENT

Electrical Measurements Laboratory

This is equipped with apparatus fundamentally planned for teaching the principles of measurement, rather than for the precise determination of quantitative results. Nevertheless it is necessary for the proper performance of work in the other laboratory courses that a certain amount of careful quantitative work should be done, and the equipment is being steadily increased and developed with both ends held in view.

Apparatus is available for instruction in the following: Resistance by Ohm's law, substitution and direct reflection, voltmeter methods for high resistance, insulation resistance, specific resistance, slide wire bridge, Wheatstone bridge, current by electrolysis, electrostatic capacity, inductance, Poggendorf's method of E M F comparison, etc., under the first head, and for work under the second head there is considerable apparatus, among which may be mentioned a conductivity bridge, a Laboratory standard Wheatstone bridge, a Kelvin low-resistance bridge, a Leeds Northrup potentiometer with two standard Weston cells, volt box and steady source of high voltage for voltmeter calibration, numerous standard

Evening School of Engineering

shunts and a 600 ampere hour storage battery for ammeter calibration, a commutator and leads for use with the Cary-Foster method and a chemical balance.

The Instrument Room is supplied with four General Electric 300-150-15 DC voltmeters, and four double-range Weston's, four single-range ammeters, six millivoltmeters with twelve interchangeable shunts of various ranges up to 100 amperes, all of high grade, together with numerous similar instruments of cheaper quality for lower-class work. For alternating current testing there are:

Three General Electric type P-3 single-phase wattmeters with double voltage and current ranges arranged for Y connection; two polyphase wattmeters of similar type and ranges, one of similar type specially constructed for measurement of core loss, three integrating wattmeters and one rotating standard.

Three 300-volt, three 150-volt and three 50-volt voltmeters.

Three 40-ampere, three 25-ampere, three 15-ampere, three 10-ampere, three 5-ampere and three 1-ampere ammeters, these all being in groups of three for polyphase work; and a laboratory standard AC voltmeter with extension coils.

There is also a considerable amount of auxiliary apparatus such as frequency indicators, synchroscopes and power factor meters.

Electrical Engineering Laboratory

This is equipped with numerous machines of different types, the size and voltage ratings being selected to reduce as much as possible the risk from large voltage and power apparatus, while at the same time availing the student of apparatus of commercial sizes such that the various quantities it is desired to measure will be of reasonable dimensions.

Small machines are used mostly for this reason, and also because the students in their engineering practice come in contact with the large sized and varied machinery of modern power houses and electrical plants continually.

Among the machines of this department are a pair of specially made matched machines, constructed to operate as single, two or three phase generators or motors, as well as synchronous converters, or double-current generators. On the direct-current side, these machines will operate as shunt, series or compound generators, either two or three wire, or

Equipment

as shunt, series or compound motors. There is a 15 H.P. Westinghouse compound motor, a 3 K.W. compound generator, a 1 K.W. series generator, a 5 H.P. General Electric interpole motor, a 5 H.P. General Electric series motor, a 4 H.P. shunt motor, two 3 H.P. shunt motors, and a 2 H.P. shunt motor; also a $7\frac{1}{2}$ kv-a. special General Electric alternator driven by a 10 H.P. General Electric interpole motor, and a 5 kv-a. Holtzer-Cabot alternator driven by a 10 H.P. Fort Wayne shunt motor. This last machine has two special rotors, permitting its use as a squirrel-cage or phase-wound, induction motor. In addition, there is a 5 K.W. Holtzer-Cabot three-phase synchronous converter, a 5 H.P. General Electric induction motor, which can be operated two or three phase, a 15 kv-a. three-phase alternator, giving practically a pure sine wave, and three General Electric transformers, each of 3 kv-a. capacity. During the past year there have been added three special 1 K.W. single-phase transformers, with leads arranged to give various types of transformer primary and secondary connections, also a set of reactances for making up three-phase inductive loads with extremely low power factor, and a similar set of condensers.

There is also available for advanced instruction, in cooperation with the Mechanical Engineering Department, the four three-wire generators in the main generating plant. Three of these generators are driven by Ridgeway reciprocating engines and one by a Westinghouse-Parson turbine.

Physics Laboratories

The Physics Department has been very completely equipped with all necessary apparatus for the experimental work that is required of the students, as well as that required for lecture demonstration. There is a large laboratory, together with a lecture room devoted entirely to Physics. Among other things have been added verniers, levels, spherometers, calorimeters, thermometers, pyrometers, a spectroscope, a microscope, a spectrometer, balances, standard gram weight, lecture table galvanometer, optical disk with all accessories, lenses, photometer, a full set of Weather Bureau apparatus, including a barograph, thermograph, hygrometer, barometer, maximum and minimum thermometers, etc. These, in addition to the equipment already owned, give a wide range to the experimental work that can be done.

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Chemical Laboratories

The School has three laboratories completely equipped in all respects for carrying on all lines of chemical work, from that of a high school to that of most advanced college grade. They have accommodations for over one hundred and fifty students, and are suitably furnished with all the necessary appliances for chemical work. Some of these are: hoods, drying closets, a still, steam and hot-water baths, electrolytic circuits, vacuum and pressure apparatus, balances, combustion furnaces, and complete sets of apparatus for the sampling and analysis of flue gases and fuels. There are also testing machines for oils, viscosimeters, and different sorts of flash point apparatus. A chemical museum is connected with this department, where are kept specimens for purposes of illustration.

Libraries

The School shares the privileges of the steadily growing Y.M.C.A. Libraries in the Main Building. It also supports a professional library distributed among the various departments. In addition to this, it subscribes to current periodicals on engineering and scientific subjects for the exclusive use of students. All members of the School are entitled to take books from the Boston Public Library, and this offers a very unusual opportunity to our non-resident students.

Department of Physical Training

Our new gymnasium with all the latest modern equipment gives ample accommodation for all students. There is a running track on the grounds adjoining, together with tennis and hand-ball courts; also a large natatorium where swimming is taught by competent instructors. In connection with this department there are also six excellent bowling alleys, which may be used by the students upon the payment of a nominal fee.

Courses of Study

COURSES OF STUDY

Schedule of Engineering Subjects

(Arranged alphabetically by subjects)

<i>Subject</i>			
<i>Number</i>	<i>Subject</i>	<i>Evenings</i>	<i>Time</i>
1	Algebra	Mon. and Thurs.	7.00-7.45
32	Alternating Currents, Lectures	Mon. and Thurs.	8.30-9.15
33	Alternating Currents, Laboratory	Fri.	7.00-9.15
36	Analytical Chemistry, Lectures	Mon. and Thurs.	7.00-7.45
37	Analytical Chemistry, Laboratory	Mon. and Thurs.	7.45-9.15
		Tues.	7.00-9.15
5	Analytical Geometry	Mon. and Thurs.	8.30-9.15
6	Calculus	Mon. and Thurs.	8.30-9.15
7	Chemical Physics	Mon. and Thurs.	8.30-9.15
30	Direct Currents, Lectures	Mon. and Thurs.	7.00-7.45
31	Direct Currents, Laboratory	Fri.	7.00-9.15
26	Foundations	Mon.	8.30-9.15
2	Geometry	Mon.	7.45-8.30
13	Highway Engineering	Tues.	8.30-9.15
27	Hydraulics	Mon. and Thurs.	7.00-7.45
28	Hydraulic Motors	Mon. and Thurs.	7.00-7.45
34	Inorganic Chemistry, Lectures	Mon. and Thurs.	7.45-8.30
35	Inorganic Chemistry, Laboratory	Wed.	7.00-9.15
3	Logarithms and Slide Rule	Mon.	7.45-8.30
23	Machine Drawing	Fri.	7.00-9.15
24	Machine Design	Fri.	7.00-9.15
25	Materials of Construction	Mon. and Thurs.	7.00-7.45
10	Mechanical Drawing	Wed.	7.00-9.15
22	Mechanical Engineering Drawing	Fri.	7.00-9.15
38	Organic Chemistry, Lectures	Wed.	7.45-8.30
39	Organic Chemistry, Laboratory	Mon. and Tues.	7.00-9.15
16	Practical Mechanics	Mon. and Thurs.	7.45-8.30
8	Practical Physics	Mon. and Thurs.	8.30-9.15
9	Practical Physics Problems	Thurs.	7.45-8.30
14	Railroad Engineering	Mon. and Thurs.	8.30-9.15
15	Railroad Engineering Drawing	Wed.	7.00-9.15
17	Strength of Materials I	Mon. and Thurs.	7.00-7.45
18	Strength of Materials II	Mon. and Thurs.	8.30-9.15
21	Structural Design	Tues.	7.00-9.15
19	Structural Drawing	Tues.	7.00-9.15
11	Surveying	Mon. and Thurs.	7.00-8.30
20	Theory of Structures	Mon. and Thurs.	7.00-8.30
29	Thermodynamics	Mon. and Thurs.	7.45-8.30
12	Topographical Drawing	Tues.	7.00-8.30
4	Trigonometry	Mon. and Thurs.	7.00-7.45

Evening School of Engineering

Special Courses

<i>Subject</i>			
<i>Number</i>	<i>Subject</i>	<i>Evenings</i>	<i>Time</i>
40	Architectural Drawing I	Mon. and Fri.	7.30-9.30
41	Architectural Drawing II	Mon. and Fri.	7.30-9.30
42	Architectural Drawing III	Mon. and Fri.	7.30-9.30
43	Radio Communication	Mon., Thurs. and Fri.	7.45-8.30
44	Radio Code and Practice (Elementary)	Mon., Thurs. and Fri. and	7.00-7.45 8.30-9.15
45	Radio Code and Practice (Advanced)	Mon., Thurs. and Fri. and	7.00-7.45 8.30-9.15
46	Radio Laboratory	By assignment	

Rates of Tuition

RATES OF TUITION

Regular Three-Year Courses

The tuition for the first year of all regular three-year courses is fifty (50) dollars, payable as follows:

\$20.00 upon entering
\$15.00 November 15
\$15.00 January 15

The tuition for all years but the first, of the regular courses, shall be sixty (60) dollars, payable as follows:

\$30.00 upon entering
\$15.00 November 15
\$15.00 January 15

The foregoing rates include membership in the Association.

Individual Engineering Subjects

(Arranged alphabetically by subjects)

<i>Course</i>	<i>Tuition</i>
1 Algebra	\$10.00
32 Alternating Currents, Lectures	20.00
33 Alternating Currents, Laboratory	30.00
36* Analytical Chemistry, Lectures	20.00
37* Analytical Chemistry, Laboratory	70.00
5 Analytical Geometry	10.00
6 Calculus	10.00
7 Chemical Physics	20.00
30 Direct Currents, Lectures	20.00
31 Direct Currents, Laboratory	30.00
26 Foundations	10.00
2 Geometry	5.00
13 Highway Engineering	10.00
27 Hydraulics	10.00
28 Hydraulic Motors	10.00
34* Inorganic Chemistry, Lectures	20.00
35* Inorganic Chemistry, Laboratory	30.00
3 Logarithms and Slide Rule	5.00
23 Machine Drawing	15.00
24 Machine Design	30.00
25 Materials of Construction	10.00
10 Mechanical Drawing	15.00
22 Mechanical Engineering Drawing	15.00
38* Organic Chemistry, Lectures	20.00
39* Organic Chemistry, Laboratory	60.00
16 Practical Mechanics	20.00
8 Practical Physics	20.00
9 Practical Physics Problems	10.00
14 Railroad Engineering	20.00
15 Railroad Engineering Drawing	30.00
17 Strength of Materials I	10.00
18 Strength of Materials II	10.00

Evening School of Engineering

	<i>Course</i>	<i>Tuition</i>
21	Structural Design	\$30.00
19	Structural Drawing	30.00
11	Surveying	40.00
20	Theory of Structures.	40.00
29	Thermodynamics	20.00
12	Topographical Drawing	20.00
4	Trigonometry	10.00

* A laboratory fee of five dollars per year will be charged to each student taking courses in the chemical laboratories. In addition, a laboratory deposit of five dollars will be required. This deposit is returnable upon payment of all breakage and other charges.

Special Courses

40	Architectural Drawing I	\$20.00
41	Architectural Drawing II	20.00
42	Architectural Drawing III	20.00
43	Radio Communication	15.00
44	Radio Code and Practice (Elementary)	20.00
45	Radio Code and Practice (Advanced)	20.00
46	Radio Laboratory	20.00

Special Note.—The above rates are in addition to membership (\$2). In case more than one subject is taken, a discount of \$3 for each additional subject will be made.

NORTHEASTERN COLLEGE

SCHOOL OF LAW

Evening Sessions

Established in 1898; incorporated in 1904. Provides a four-years' course in preparation for the Bar, and grants the Degree of Bachelor of Laws.

SCHOOL OF COMMERCE AND FINANCE

Evening Sessions

Established in 1907; incorporated in 1911. Offers the following three- and four-year courses leading to the degree of B.C.S. (Bachelor of Commercial Science): Business Administration and Professional Accountancy. Any one passing the examination for advanced standing is enabled to complete any one of the four regular courses and secure the degree in three years. Special courses in addition to regular courses.

CO-OPERATIVE SCHOOL OF ENGINEERING

Day Sessions

Four-year courses in Civil, Mechanical, Electrical and Chemical Engineering, in coöperation with engineering firms. Students earn while learning. Open to high school graduates.

EVENING SCHOOL OF ENGINEERING

Evening Sessions

A school offering three-year courses in Civil, Mechanical, Electrical, Chemical and Structural Engineering.

SCHOOL OF LIBERAL ARTS

Evening Sessions

Courses of college grade in English, Ancient and Modern Languages, Mathematics, Science, History, Education and Journalism have been offered. Professors and instructors of New England colleges have been engaged. These courses are open to graduates of high schools and to others who can meet the entrance requirements.

For further information concerning any of the above schools or departments, address

NORTHEASTERN COLLEGE

316 Huntington Avenue, Boston, Massachusetts

**THE EVENING
SCHOOL OF
ENGINEERING**



**FOUNDED FOR THE INSTRUCTION
OF MEN IN THE THEORY AND
PRACTICE OF ENGINEERING**

NORTHEASTERN COLLEGE

School of Liberal Arts

(CATALOGUE SUPPLEMENT)

*The School which enables young men
to secure a college education in the evening.*

*The grade of work is equivalent to that
done by the leading colleges of New England.*

*Complete catalogue of the school, out-
lining courses of study, will be mailed upon
request.*

BOSTON
YOUNG MEN'S CHRISTIAN
ASSOCIATION

316 HUNTINGTON AVENUE, BOSTON, MASS.

SCHOOL OF LIBERAL ARTS

CALENDAR

1919—	September 22 . . .	Opening of first semester.
	December 22-28 . . .	Christmas recess.
1920—	January 12-16 . . .	First semester examinations.
	January 16 . . .	Close of first semester.
	January 26 . . .	Opening of second semester.
	May 10-14 . . .	Final examinations.
	May 14 . . .	Close of second semester.

SCHOOL OF LIBERAL ARTS

Aim

The aim of the School of Liberal Arts of Northeastern College is to provide for young men who are compelled to work in the daytime an opportunity to secure an education of college grade in the evening.

Hundreds of young men are graduated from our high schools each year who, for various reasons, are unable to attend college in the daytime, and who are desirous of securing a liberal education.

The School of Liberal Arts furnishes to such young men courses of study corresponding in content and quality to those given in the day colleges, and enables them, at the same time, to be employed in lucrative positions during the day.

It is possible for young men who pursue the courses given by the school to transfer at any time to other colleges in Boston and vicinity and receive credit for the work they have done. This makes it possible for them to take the first two or three years of their college work in the evenings while earning money enough to pay their way through a day college for the remaining time.

Pre-Medical Course

Students of the School of Liberal Arts are enabled to take a pre-medical course which covers the work pursued in the regular pre-medical schools.

Advantages of a Liberal Education

The value of a college training is becoming more and more recognized, and a constantly increasing number of young men are desirous of obtaining a liberal education. While efficiency is calling in many branches of work for trained men in highly specialized lines of work, young men frequently make the mistake of specializing before they have secured an education

SCHOOL OF LIBERAL ARTS

sufficiently broad and fundamental to enable them to grow and expand with their work, and to do independent thinking.

The young man who is wise enough to foresee this is the one who takes the time to pursue a wide field of study, such as will broaden his interests and sympathies, balance his judgments, and increase his capacity for the correct enjoyment of life. In addition to this, he will pursue a course of study which will train him in the particular field of activity which his enlarged vision has enabled him to choose wisely.

Students of the School of Liberal Arts are allowed to pursue a limited number of courses in the Law School, Engineering School, and School of Commerce and Finance.

Courses of Study

The courses of study offered by the School include work in the following general fields:

English Composition.	Economics.
English and American Literature.	Accounting.
Journalism.	Ancient and Modern History.
Public Speaking.	Government.
Foreign Languages.	Law.
Mathematics.	Philosophy.
Physics.	Ethics
Chemistry.	Psychology
Biology.	Logic.

Details concerning these and additional courses may be found in the catalogue.

Inasmuch as the content of the courses offered is equivalent to that of the ordinary day courses, it is not always possible for evening students to do as much work as day students who are not employed. Evening students, however, have the advantage

SCHOOL OF LIBERAL ARTS

of making up deficiencies thus incurred by pursuing courses given during the summer.

Faculty

The faculty of the School of Liberal Arts is composed of men who are teaching during the day in the leading colleges in and around Boston.

Admission

Students are admitted to the School by certificate, and by examination. It is expected that entrants shall have successfully completed a four-year high school course in an approved school.

Students who wish to go on to other colleges at the end of their course at Northeastern are expected to meet the admission requirements of the particular college to which they hope later to go.

A limited number of special students are admitted. Such students usually qualify on the basis of maturity and ability to pursue the work.

Students who cannot entirely meet the admission requirements, and whose credentials are otherwise good, will be admitted upon condition that the deficiency be made up during the first two years of study.

Those who are in doubt of their ability to meet the requirements as outlined are requested to confer with the Dean.

Sessions

Courses meet three evenings a week. Meetings are one hour in length. The courses are conducted by lectures, quizzes, outside readings and reports. Classes are small and students

SCHOOL OF LIBERAL ARTS

are thrown in close contact with the instructors, who are always ready to give individual attention to those as may desire it.

Courses will be opened in the late afternoon whenever a sufficient number of students apply.

Tuition

The tuition fees for students entering the School in September, 1919, will be as follows:

1 course	\$25
2 courses	45
3 courses	60
4 courses	75

The fee for half courses will be \$15. By a whole course is meant a course meeting three times a week throughout the year, or thirty-two weeks. A half course may meet half time throughout the year, or three times a week for a half year. In addition to the above fees students will be charged the regular Y. M. C. A. membership fee of two dollars.

Library

The Library of the Y. M. C. A. adjoins the class rooms of the School, where reference books and books reserved for reading courses may be found. Students of the School of Liberal Arts are entitled to the use of the Library at all times.

Employment

Men living out of town and who desire to be employed in Boston while studying in the School are advised to communicate with the Employment Department.

SCHOOL OF LIBERAL ARTS

Educational and Vocational Guidance

The Dean of the School of Liberal Arts is willing, at all times, to confer with men who are desirous of securing guidance in their plans for an education. The office of the Dean is open all day and on the evenings on which classes meet.

Registration

Registration may take place at any time. An application blank will be forwarded upon request. Enrollment in the various courses takes place during the week preceding the opening of the first semester.

Further Information

A complete catalogue of the School, including outlines of courses of study, will be mailed upon request.

Address communications to

MILLARD A. BLACK, Dean

School of Liberal Arts,
316 Huntington Avenue, Boston, Mass.

Conference appointments by telephone, — B. B. 4400.



THE HUNTINGTON SCHOOL



1918

1919

THE
HUNTINGTON
SCHOOL



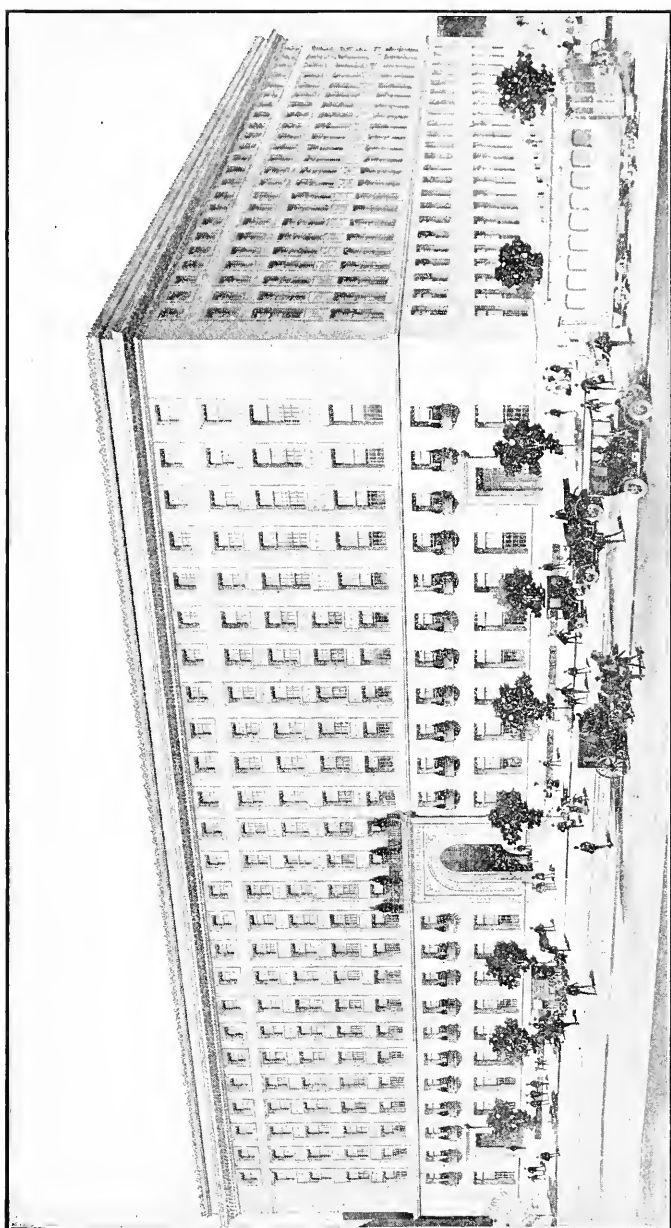
1901

1901

THE HUNTINGTON SCHOOL FOR BOYS

UNDER THE AUSPICES OF THE
BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

316 HUNTINGTON AVENUE



MAIN BUILDING

Calendar

1918

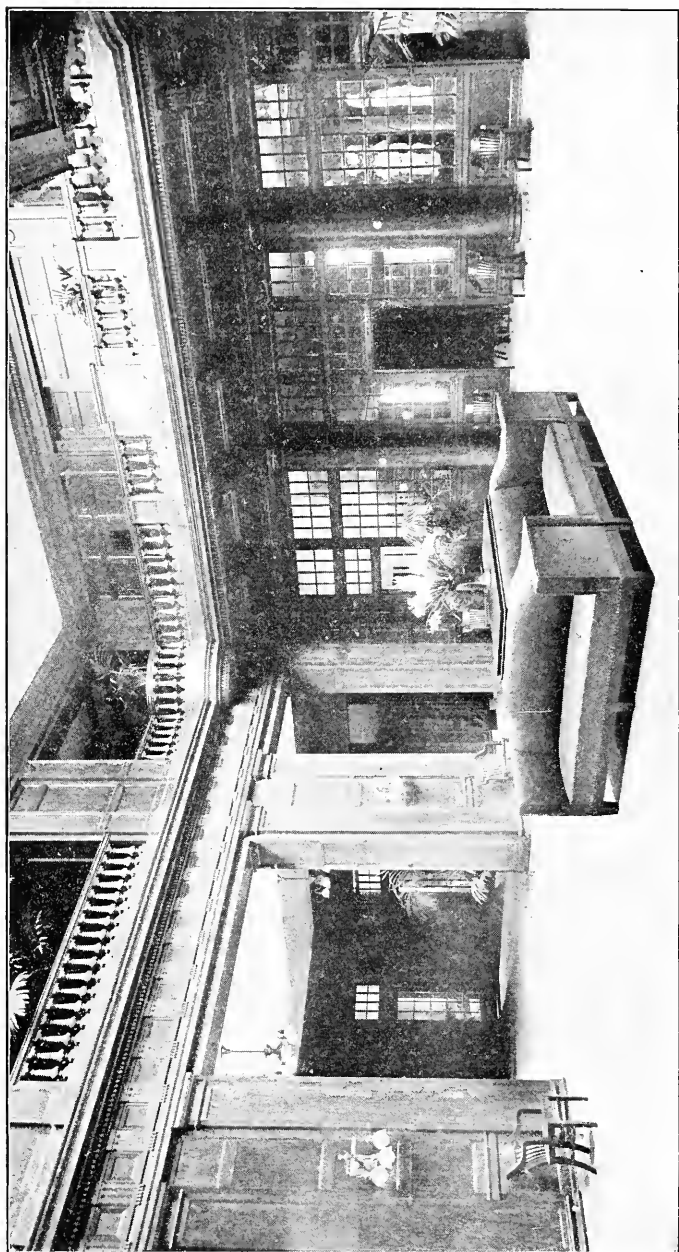
- May 1 to Sept. 1. Period of Registration
Oct. 1. School Year Begins
Nov. 28. Thanksgiving Day
Dec. 18. Close of Fall Term

1919

- Jan. 1. Winter Term Begins
March 28. Close of Winter Term
April 7. Spring Term Begins
May 30. Decoration Day
June 6. Commencement Day
Sept. 30. School Year Begins
Oct. 12. Columbus Day
Nov. 27. Thanksgiving Day
Dec. 19. Close of Fall Term

1920

- Jan. 5. Winter Term Begins
Feb. 22. Washington's Birthday
March 27. Close of Winter Term
April 6. Spring Term Begins
April 19. Patriot's Day
May 30. Decoration Day
June 5. Commencement
Sept. 29. School Year Begins



MAIN LOBBY

Board of Governors

ALBERT H. CURTIS, Chairman
ARTHUR STODDARD JOHNSON
GEORGE WHITEMORE MEHAFFEY
WILLIAM C. CHICK
MORGAN L. COOLEY
FRANK PALMER SPEARE
STANWOOD G. WELLINGTON
FRED T. FIELD

GALEN D. LIGHT,
Secretary-Bursar

Advisory Committee

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Professor of Education, Harvard

FRANK W. WRIGHT
Deputy Commissioner of Education
of Massachusetts

ALEXANDER INGLIS
Asst. Professor of Education, Harvard

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IRA A. FLINNER, A.B.
(Harvard University)
Headmaster

MILLARD A. BLACK, A.A.
(Harvard University)
Assistant to the Headmaster

CHARLES H. SAMPSON, S.B.
(University of Maine)
Head of Technical Division

*WILLIAM S. SPENCER, A.M.
(Harvard University)
Head of Preparatory Division and English Instruction

ARTHUR W. HALE, A.B.
(Amherst College)
Head of Department of Mathematics
Faculty Director of Athletics

JOHN C. DIETZ, A.B.
(University of Pittsburgh) (University of Paris)
Head of Modern Language Department

CHESTER A. JENKINS, S.B.
(Dartmouth College)
Head of Science Department

WAYNE M. SHIPMAN, A.B.
(Harvard University)
Head of Latin Department

ALBERT E. GARLAND, M.D., B.P.E.
(Union Medical College) (Springfield College)
Director of Physical Training

CHARLES N. GREGG, A.M.
(Arcadia University) (Harvard University)
History

NEWELL W. EDSON, A.B.
(Harvard University)
French and German

ROLAND W. RAND
Commercial Subjects

FREDERICK C. HOSMER, A.B.
(Boston University) (Harvard University)
English, Commercial Subjects

WILLIAM A. SWICK, A.B.
(Allegheny College)
Mathematics

* On leave of absence

ALBERT H. EWING, A.B.
 (Harvard University)
English

JAMES B. TAYLOR, A.M.
 (Harvard University)
English

JAMES H. MORSS, A.B.
 (Boston University)
Lower School

* JAMES A. BELL, A.B.
 (Harvard University)
Lower School

SEWARD H. RATHBUN, A.M.
 (Harvard University)
Architectural Drawing

JAMES BROUGH
Freehand Drawing and Design

WILLIAM M. RODGERS
 (Parkman School)
Electricity

LESTER W. DEARBORN
 (Harvard Summer School) (Boston University)
Manual Training

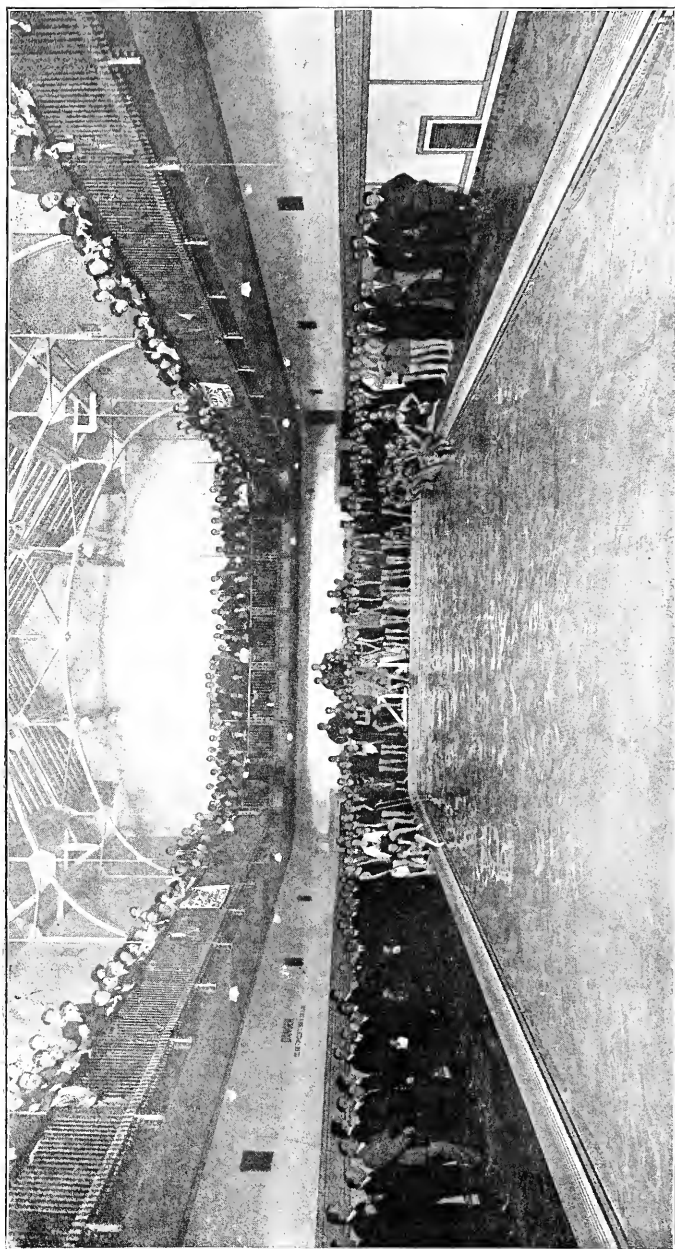
ELIZA R. BAILEY
Lower School

JOSEPH A. AUDET
Director of Musical Clubs

JESSICA E. CARR
Secretary to the Headmaster

EMILY V. S. RAMSAY
Recorder

* On leave of absence



WATER CARNIVAL

AIM AND SCOPE

THE School has as its first object the preparation of boys for the colleges and the scientific schools. It also provides training along engineering and business lines for those who do not expect to enter college. The developing of character and the training of the body form a fundamental part of its program.

HISTORY

THE Huntington School is now in its tenth year, having opened in September, 1909. From that date the attendance has increased year by year until now three hundred boys are enrolled. Such a growth indicates that the School has the confidence of the public and that its administration, organization, aims and purposes are in accordance with sound educational principles.

BUILDINGS AND EQUIPMENT

THE School is housed in the finest buildings of their kind in America. They contain thirty classrooms, chemical, physical, electrical and manual arts laboratories excellently equipped with modern apparatus for carrying on school work; an assembly hall, which seats five hundred; a gymnasium, one hundred eighty-eight by seventy-two feet, encircled by a running track of twelve laps to the mile; swimming pool, seventy-five by twenty-five, under a glass roof admitting floods of light and sunshine; game rooms, libraries, offices, clubrooms, dining rooms, and three hundred dormitory rooms.

Adjoining the building is the athletic field, with its tennis courts, running tracks and means for other outdoor sports.



GAME AND SOCIAL ROOM — OLDER BOYS

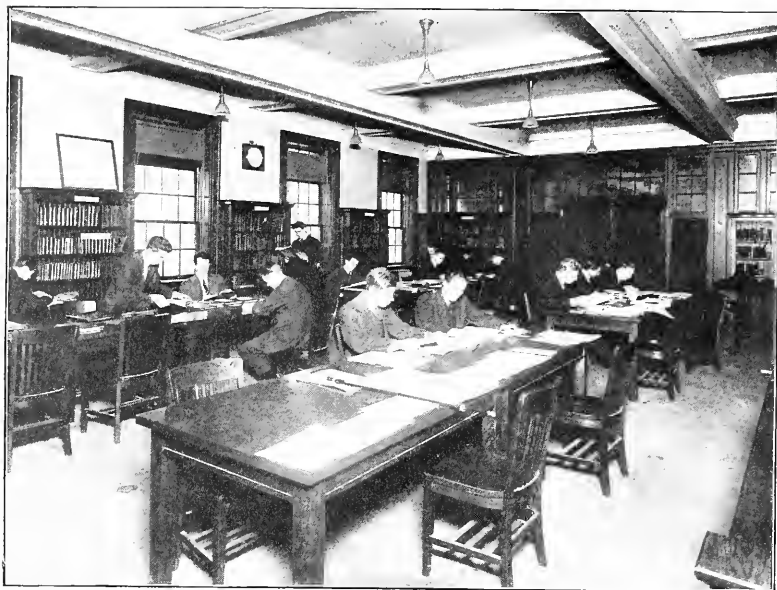


GAME AND SOCIAL ROOM — YOUNGER BOYS

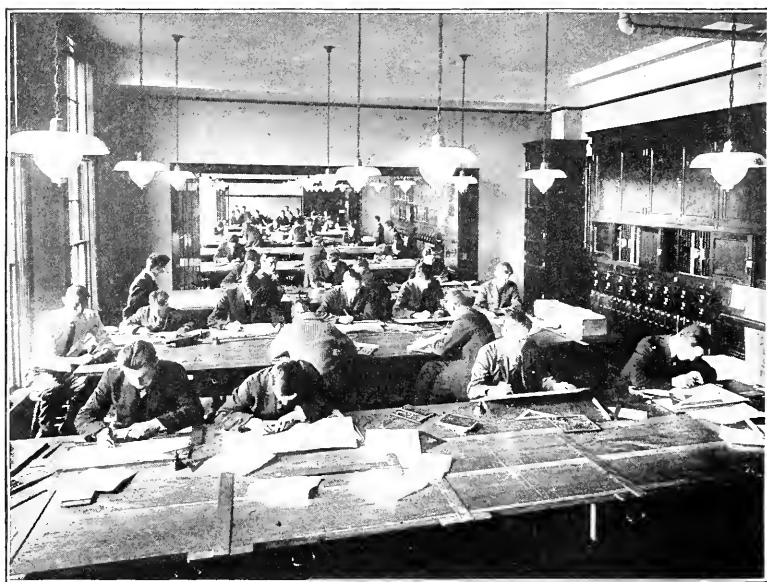
FEATURES

IN the Huntington School the individual is neither embarrassed nor retarded by the class, but is encouraged at all times to do his best, with the inspiration that individual help offers.

The following features will commend themselves to parents and students: male teachers, small classes, frequent reports; lectures, practical talks; athletics, gymnastics, social features, educational and vocational guidance and a distinctive study plan by the laboratory method.



GENERAL LIBRARY



DRAFTING ROOM

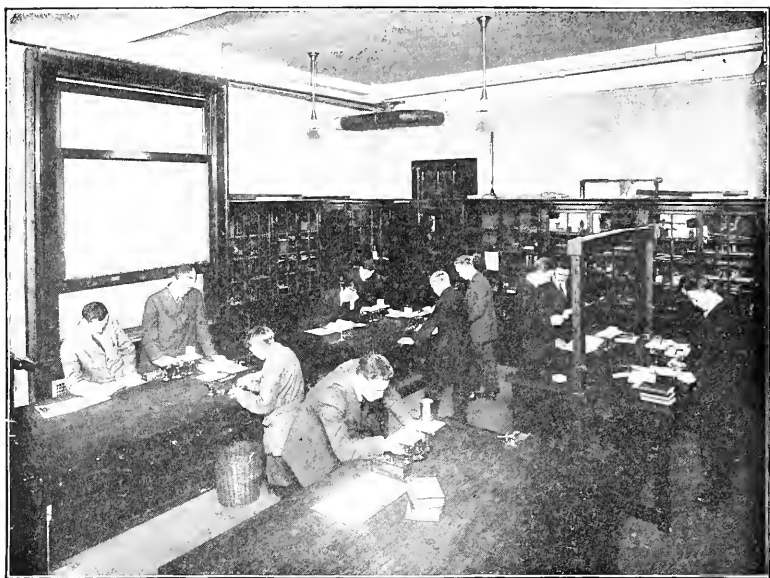
General Information

THE students are under the most wholesome influences. The School is non-sectarian but thoroughly Christian in character. The relations between teachers and students are close and friendly, constituting a distinctive element in the life of this school. The discipline is firm but reasonable. Students are expected to cultivate self-control, truthfulness and a right sense of honor. The discipline is not adapted to boys who require severe restrictions. A boy whose influence is felt to be injurious in any way will not be retained in the school.

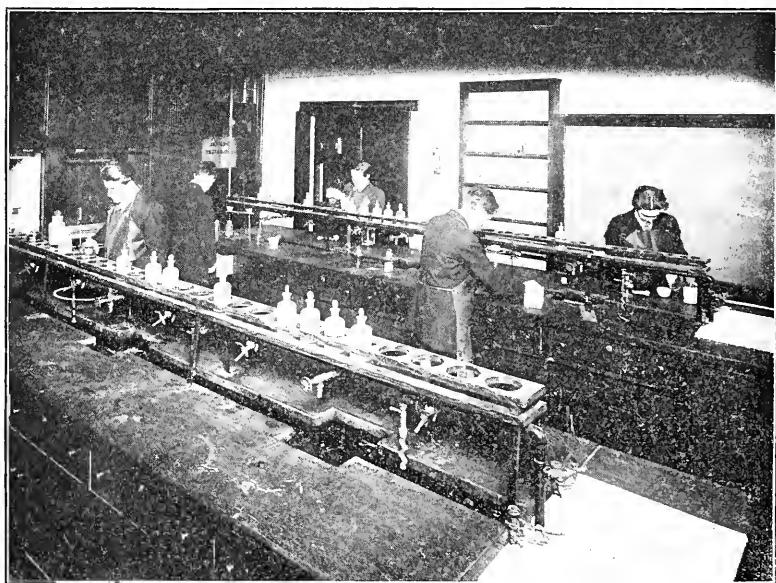
Reports The progress of the students is watched very closely. Instructors make weekly reports to the Headmaster of the work accomplished by each student; monthly reports are sent to the parents; in cases where it is deemed necessary reports are sent more frequently. Special reports are sent home at the close of each division of the year. In this and in other ways effective co-operation between parents and teachers is sought.

Except where prolonged illness interferes, a student does a week's work in a week's time. A student who is absent from any recitation or recitations is obliged to make up the work before the close of the week.

Activity Clubs Students of the School who are musically inclined have an opportunity to become members of the Glee Club, the Orchestra, or the Mandolin Club. Musical specialists are employed to take charge of this work, and members find that the time thus spent will not only be pleasant but profitable. These clubs unite in giving concerts during the year. Credit is given toward graduation to members of a musical organization. Those



PHYSICS LABORATORY



CHEMISTRY LABORATORY
(One of Three)

interested in public speaking or dramatics may join the Debating Club, the Public Speaking Club or the Dramatic Society. There are also a Language Club and an Arts and Crafts Club which attract those interested in these directions.

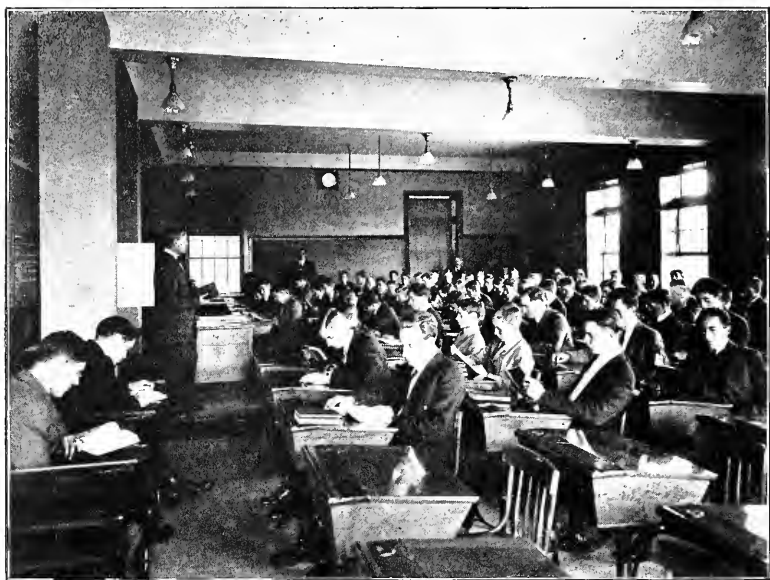
Lunches Students can lunch at our restaurant. Prices are reasonable and the food is wholesome.

Rooms Students from a distance may, by early application, secure rooms in the building. Excellent table board can be had also. The charge for rooms ranges from \$2.00 to \$4.00 a week; table board is furnished for \$6.00 a week up.

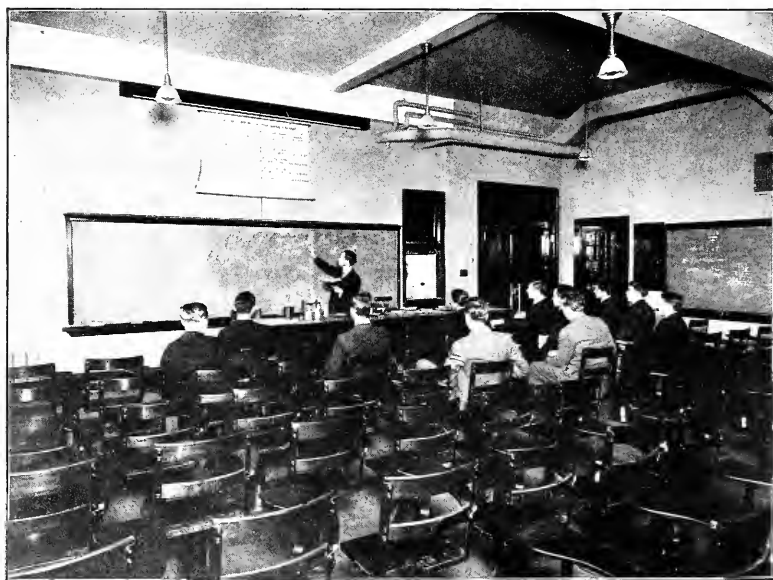
Organization While the Huntington School enrolls three hundred boys, it is so organized that the advantages of the small school are retained. The students are divided into three groups: the business division, the technical division and the preparatory division, each under the direction of a supervisor. They are again sub-divided into units of from twenty to twenty-five boys. Each of these units is in charge of a head of a department who is assisted by an instructor. Each teacher of the school, therefore, is responsible for twelve to fifteen boys. In this way close touch is kept with each student.

Recreation and Health Few schools have such facilities for physical training as are found at Huntington. The gymnasium with its running track, three basketball courts, wrestling room, special exercising room, handball courts, and bowling alleys, is one of the most complete in New England. The swimming pool under a glass roof, filled with filtered salt water, heated to the proper temperature, compares favorably with the best.

The outdoor facilities are exceptional for a city school, making it possible to introduce many features common only to country schools. Adjoining the building is a large field equipped for athletics. Here are four tennis courts, outdoor gymnasium, handball court, basketball courts, jumping pits, board track, cinder track with a 100-yard straightway, and baseball and football fields. We are near enough to the Charles River to maintain a crew, and our proximity to the Arena where ice hockey is played, gives additional means of exercise.



STUDY HALL



PHYSICS LECTURE ROOM

**Physical
Examination**

Before students are assigned to physical work they are given a physical examination; the examiner advises as to the kind of exercise best suited to the needs of each. All students physically able are required to take this physical work which has for its aim the symmetrical development of the body.

In addition to this work students participate in games and sports. Many different sports are offered each season: during the fall term, football, cross country, track, tennis, outdoor basketball, association football, and field hockey; during the winter term, track, indoor and outdoor basketball, swimming and hockey; during the spring term, baseball, track, tennis, soccer, cross country and rowing. Each sport is directed by teacher coaches, men who were prominent in athletics at college, and have had experience in directing athletics.

The School maintains that the greatest good is secured through a system of physical training that gives each boy regular exercise under the leadership of men whose standards of living are right.

**Gymnasium
Uniforms**

It has been found advisable to have a uniform suit for these gymnasium classes. Therefore new pupils are requested not to get gymnasium suits before entering. Orders will be taken in the Physical Department, immediately upon the opening of the School in the fall.

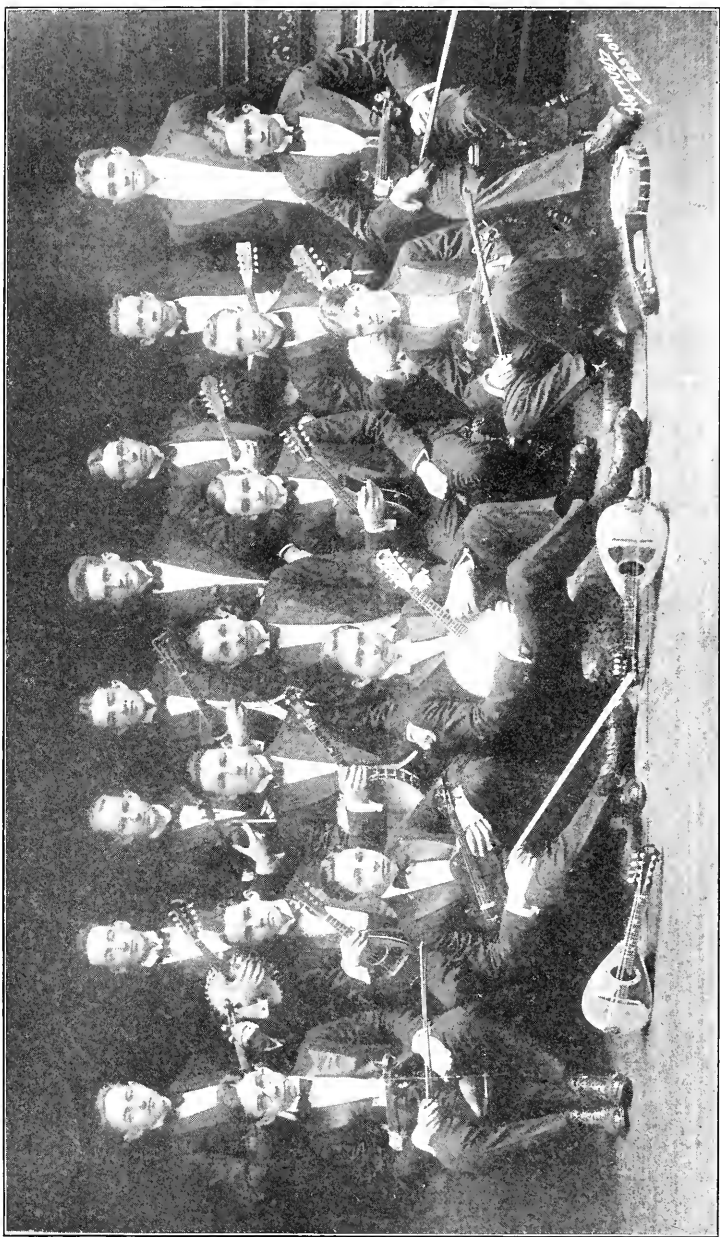
**Hours of
Attendance**

The School is in session five days each week. Attendance on Saturday morning may be required of students who are behind in their work, or for disciplinary reasons.

The daily hours of attendance for the Lower School are from 8.55 to 4.30. Two hours of this time are given to recreation. The session for the Upper School begins at 8.55 and closes at 3.30. Boys in the Preliminary Years are dismissed whenever advisable after 3 P.M.

**Chapel
Exercises**

All the students assemble each day for exercises. A portion of the period is given over to devotional exercises; the remainder is devoted to music, current events, Bible study, moving pictures of an educational nature, or to a lecture on some in-

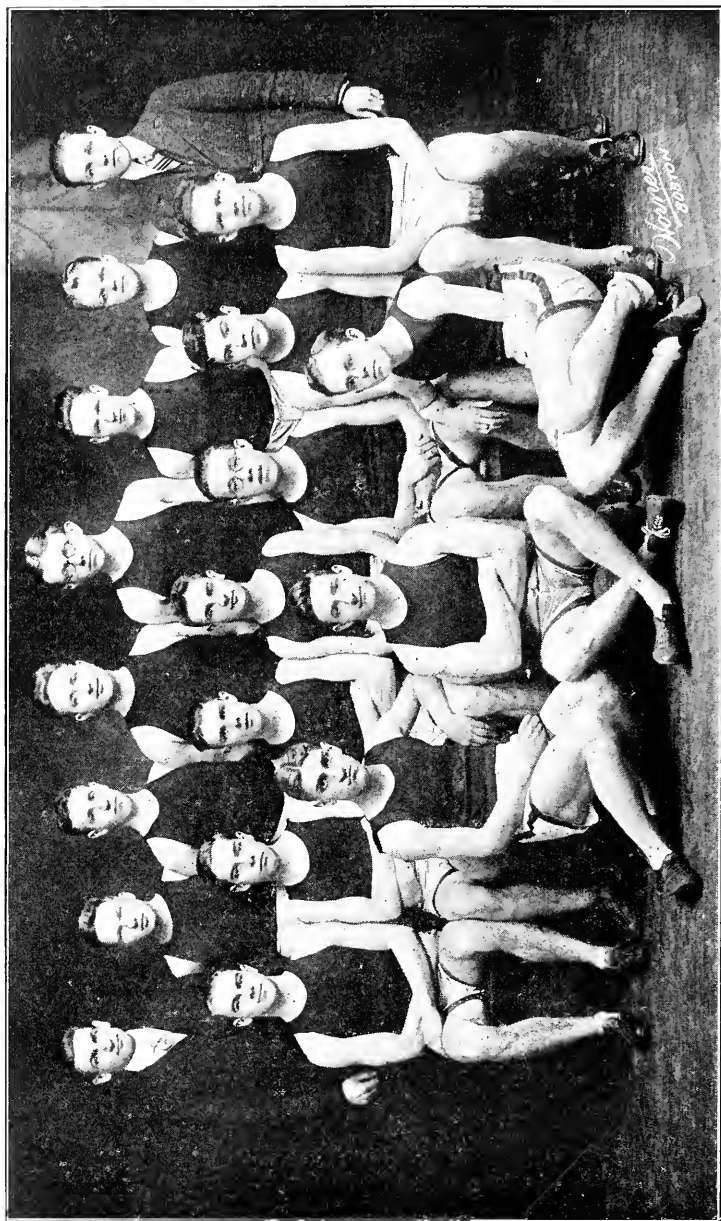


MANDOLIN CLUB

teresting subject by a specialist. The time thus spent commends itself as most valuable and practically helpful.

CHAPEL TALKS

- | | |
|--|---|
| REV. RALPH MAGEE
Pastor Dan'l Dorchester
Memorial Church | Series of talks on
"Student Qualifications" |
| CHARLES WELLINGTON
FURLONG, F.R.G.S. | Stereopticon lectures on "South
America and Central Africa" |
| PROF. CLIFFORD H. MOORE
Harvard University | "Why Go to College" |
| REV. AUSTEN K. DE BLOIS
First Baptist Church
Commonwealth Avenue | "Living Straight," also Speech
at Dedication of Service Flag |
| PROF. ROY DAVIS
Boston University | "Education through Experience" |
| MR. EDWARD VROOM | "Principles Involved in the World
War" |
| REV. GEORGE E. STOKES | "Fundamental Principles of Suc-
cess" |
| MR. HERMAN F. ARENS
Babson's Statistical Organization | "Principles of Conduct in Busi-
ness Life" |
| REV. A. A. RIDEOUT
Blaney Memorial Baptist, Dorchester | "Main Points in Success" |
| REV. GEORGE H. SPENCER
COXSWAIN JACK HYDE
U. S. Navy | "Doing" |
| HON. GRAFTON D. CUSHING | "National Ideals" |
| MR. J. A. DUMMETT
San Francisco, Cal. | "Experiences in War-Infested
Europe" |
| MR. WILLIAM B. SNOW
Headmaster, English High School | Stereopticon Lecture on
"California" |
| MR. SPENCER J. STEINMETZ
Boston, Mass. | "Teaching as a Profession" |
| PROF. H. H. MORSE
Mt. Hermon School | "Qualities which Make for
Success" |
| MR. J. A. WOLF
Y. M. C. A. College, Springfield | Stereopticon Lecture on "His-
toric Lexington" |
| LIEUT. ANDRÉ MORIZE
Harvard University | "Y. M. C. A. Work as a Life
Career" |
| MR. D. G. MELVILLE
Roxbury Carpet Co. | Stereopticon lecture on
"Modern Methods of Warfare" |
| BRIGADIER GEN. FLAMAND
Cambridge | "Manufacture of Carpets and
Rugs" |
| MR. R. B. ADAMS
Boston Belting Co. | "Experiences on the Battlefields
of France" |
| DR. H. H. PIPER
Tufts Dental School | "The Rubber Industry" |
| MR. FRANK W. WRIGHT
Deputy Commissioner of Education,
Mass. | "Dentistry as a Profession" |
| REV. MARION F. HAM
Reading, Mass. | "The Schoolboy's Part in the
War" |
| MR. GEORGE W. MEHAFFEY
Gen. Secretary, Boston Y.M.C.A. | "Negro Dialect Stories" |
| | "Character Making" |



TRACK TEAM

Entrance Examinations

PUPILS who have completed the fourth grade of a public school will be admitted to the Fifth Year without examination. Pupils who have not been prepared in the public schools will be required to pass examinations in the following subjects:

English. Ability to read readily and intelligently, to spell common words, to reproduce a short story after hearing it read.

Arithmetic. Familiarity with the fundamental operations.

Geography and History. Knowledge of such elementary geography and history as usually covered in a fourth grade.

FIRST FORM

BOYS who have completed the sixth grade of a public school will be admitted to the First Form without examination. All others will be obliged to satisfy the School that they have satisfactorily completed an equivalent course of study.

Pupils in the First Form range in ages from eleven to fourteen. No pupil over fourteen years of age will be admitted to this form.

THIRD FORM

GRADUATES of grammar schools are admitted to the Third Form without examination. Slight changes are made in the subsequent course to conform to their preliminary training.

Courses will be arranged for those who have pursued a partial high school course.

REQUIREMENTS FOR GRADUATION

FOR graduation from the School, the applicant must have completed the work of the first two forms, and in addition, sixteen hours of English, fifteen hours of mathematics (algebra and geometry), ten hours of a foreign language, five hours of a science, and five hours of history. The remaining twenty-four hours of the requirements for graduation may be from the elective courses. An opportunity is thus given to select such work as is required by the college for which the student is preparing, or to take vocational courses should he wish to complete his education with the work of this school. He must have been in attendance one full year and have completed, during that year, at least twenty hours of work with a rank of C.

CERTIFICATES

THE Huntington School is on the list of accredited schools whose certificates are accepted by United States colleges that admit by that method.

Certificates are issued only to such students as maintain a record of eighty per cent throughout a year's course.

Junior Department

FIFTH GRADE

Arithmetic Careful attention is given to the essential processes, that the pupils may attain an automatic and accurate use of numbers. Problems, both mental and written, are taken from everyday experiences. Special stress is laid on the use of fractions.

English Composition Language work is given to develop the ability to think clearly, to speak and write easily and correctly. The forming of simple sentences is taught. A high grade in spelling is required of every pupil.

Reading Subject matter correlates with the work in History from Cave Dwellers to Colonial Time. Memorizing of poetry is required.

History Beginnings of American History through the Revolution.

Geography Elements of physical geography and study of the continent.

Penmanship Modern business system of penmanship.

Drawing Map drawing and illustrating of geography and history. Notebooks are required.

Junior Department

SIXTH GRADE

Arithmetic A thorough review of fractions and the accurate use of them is required. The Beginnings of percentage, interest and denominate numbers are taught.

English Composition Language work is given to develop the power of clear and accurate observation, of straight thinking, of finding words to fit the observation and thought, and of arranging thoughts and words in clear and effective order. The formation of clear sentence structure, and the beginnings of paragraphing are taught. A high grade of spelling is required.

Reading Dickens' "A Christmas Carol," Longfellow's "Courtship of Miles Standish," and Cooper's "Last of the Mohicans," correlating with history work; selections to illustrate work in geography. Memorizing of good literature is required.

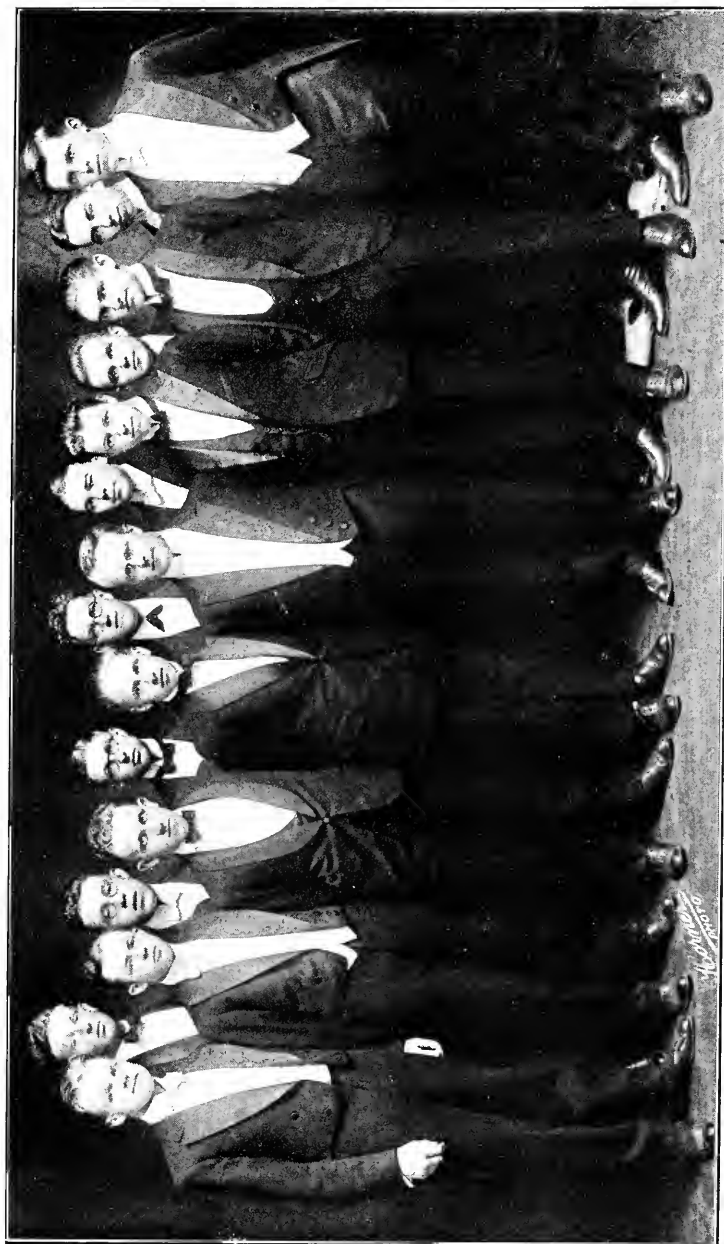
Grammar Analysis of simple sentences, recognition of parts of speech, correct use of pronouns and verbs.

History Elementary American History from the beginning to the present time.

Geography A thorough study of the United States, correlating with the work on History.

Penmanship Modern Business system of penmanship.

Drawing Map drawing and illustrating of geography and history. Notebooks are required.



GLEE CLUB

COURSE OF STUDY — PREPARATORY DIVISION

First Form

English B.	5*	Science B.	3
French B.	5	Drawing.	1
Mathematics B.	5	Music.	1
History B.	3	Woodworking.	2

Second Form

English A.	5	Science A.	4
French A.	5	Music.	1
Latin I.	5	Drawing.	1
Mathematics A.	5	Woodworking.	2
History A.	3		

Third Form

English.	5	General Science.	2
French.	5	English History.	3
Latin.	5	Mechanical Drawing.	4
Spanish.	5	Freehand Drawing.	2
German.	5	Woodworking.	2
Mathematics.	5		

Fourth Form

English.	5	Mathematics.	5
French.	5	History.	5
Latin.	5	Physics.	5
Spanish.	5	Chemistry.	5
German.	5		

Fifth Form

English.	3	Mathematics.	5
French.	5	Physics.	5
Latin.	5	Chemistry.	5
Spanish.	5	History.	5
German.	5	Mechanics.	3

*Indicates number of hours.

Senior Form

English.....	3	Chemistry.....	5
French.....	5	Physics.....	5
Latin.....	5	History.....	5
German.....	5	Mathematics.....	5
Spanish.....	5		

A student is expected to select twenty hours of work in each Form.

The selections will depend upon proper sequence and the aims of the student.

Grammar school graduates are admitted to Form Three.

HARVARD COURSE

A student preparing for Harvard University will be expected to select his courses from the program of studies so as to include:

English I, II, III, IV.

Mathematics I, II, III.

Latin I, II, III, IV.

French I, II, III.

History I and II or III.

Science II or III.

German I, II.

A student may pursue four years of either French or German and three years of Latin. It is possible, also, to offer three years of German in place of three years of French, then offer only two years of French.

A student need only offer two languages. In that case, Mathematics IV and V and an additional unit in History may be substituted in place of two years of a modern language. A number of other arrangements are possible.

The course as given above is required to matriculate at Harvard for the A.B. degree. If the S.B. degree is desired, no Latin

need be offered. The school recommends, however, that, even though a student becomes a candidate for the S.B. degree, he should offer three years of Latin in preparation.

TECHNOLOGY COURSE

A student preparing for the Massachusetts Institute of Technology must select his work to include:

English I, II, III, IV.

Mathematics I, II, III, IV.

French I, II.

German I, II.

History II or III.

Science II.

And two additional units from similar fields.

If three years of German or three years of French are offered, candidates need not offer the two additional units.

This is the preparation needed to admit to similar technical schools or scientific departments of colleges.

GENERAL COLLEGE COURSE

Students who have not selected their college should pursue the following courses:

English I, II, III, IV.

Mathematics I, II, III.

Languages, two years.

Science, one year.

History, one year.

And five additional units selected from the same fields.

In all of the three courses, it is taken for granted that the work of Forms One and Two has been completed.

COURSE OF STUDY — TECHNICAL DIVISION

Practical Technical Course

First Form

English B	5*	Drawing	1
Mathematics B	5	Music	1
History B	3	Woodworking	2
Science B	3		

Second Form

English A	5	Music	1
Mathematics A	5	Drawing	1
History A	3	Woodworking	2
Science A	4		

Third Form

English I	5	Mechanical Drawing	6-3
Mathematics VIII	2	Freehand Drawing	2-1
Mathematics I	5	Woodworking	4-2
Science	1, 2		

Fourth Form

English II	5	Mechanical Drawing	6-3
Mathematics II	5	Pattern Making	4-2
Commerce and Industry	2	Electricity I	2

Fifth Form

English IIIT	3	Electricity II	2
Materials	2	Mechanical Drawing	6-3
Mathematics III	5	U. S. History	5

Senior Form

English IVT	3	Physics	5
Mathematics VII	3	Economics	3
Mathematics V	3	Architectural Drafting	6-3

* Indicates number of hours.

Grammar school graduates are admitted to Form Three.

ELECTRICAL COURSE

The following work is prescribed for the Electrical Course:

English I, II, IIIT, IVT.
Mathematics I, II, III, V, VII, VIII.
Electricity I, II, III.
Science I, II.
Mechanics and Materials.
Woodworking and Drawing.

ARCHITECTURAL COURSE

The following work is prescribed for the Architectural Course:

English I, II, IIIT, IVT.
Mathematics I, II, III, V, VII, VIII.
Science I, II.
Woodworking.
Mechanics and Materials.
Freehand Drawing and Architectural Drawing.

The Technical, Electrical, and Architectural Courses may be pursued by Grammar School graduates as three or four-year courses.

ONE YEAR — TECHNICAL COURSE

This is open to High School graduates. The subjects required are Applied Mathematics, Mechanics, Materials, Trigonometry, and Drawing.

SPECIAL COURSES

A special two-year course in Architectural Drawing and a one-year course in Machine Drawing are offered to students who have pursued the requisite courses in Mathematics to profit by such work.

COURSE OF STUDY — BUSINESS COURSE

First Form

English B.	5*	Drawing.	1
Mathematics B.	5	Music.	1
History B.	3	Woodworking.	2
Science B.	3		

Second Form

English A.	5	Music.	1
Mathematics A.	5	Drawing.	1
History A.	3	Woodworking.	2
Science A.	4		

Third Form

English I.	5	General Science.	2
Mathematics I.	5	History.	3
Penmanship.	5	Business Arithmetic.	2
Commerce and Industry.	2		

Fourth Form

English II.	5	Bookkeeping I.	8-4
Spanish I.	5	Business Mathematics.	2
Mathematics II.	5	Penmanship II.	5½

Fifth Form

English IIIT.	3	Elementary Shorthand.	5
Spanish II.	5	Typewriting.	5
Mathematics III.	5	U. S. History.	5
Advanced Bookkeeping.	8-4	Economics.	3

Senior Form

English IVT.	3	Salesmanship.	2
Accounting I.	8-4	Advertising.	2
Shorthand II.	5	Commercial Draft.	4-2
Typewriting II.	5	History of Commerce.	2
Office Practice.	1	General Secretarial Work	
Commercial Law.	2		

*Indicates number of hours.

Grammar school graduates are admitted to Form Three.

BOOKKEEPING COURSE

Forms One and Two.

Twenty hours selected from Form Three.

English II, IIIT, IVT.

Mathematics I, II, III.

Bookkeeping.

Accounting.

Commercial Law.

Business Mathematics.

Penmanship.

Spelling.

Typewriting.

Enough elective work to total 75 hours for the last four forms.

COMBINED BOOKKEEPING AND SHORTHAND COURSE

Forms One and Two.

Twenty hours selected from Form Three.

English II, IIIT, IVT.

Bookkeeping.

Shorthand.

Typewriting I and II.

Penmanship.

Spelling.

Business Arithmetic.

Office Practice.

Enough elective work to total 75 hours for the last four forms.

SECRETARIAL COURSE

Forms One and Two.

Twenty hours selected from Form Three.

English II, IIIT, IVT.

Spanish I, II.

Penmanship.
Spelling.
Shorthand.
Typewriting.
General Secretarial Work.
Office Practice.

Enough elective work to total 75 hours for the last four forms.

High School graduates may pursue concentrated courses in bookkeeping or shorthand and typewriting and allied subjects and secure a certificate upon completing the work. Such courses usually require one year.

Students who have pursued partial High School courses will be classified in accordance with the amount of work completed. Forms One and Two correspond to the seventh and eighth grades. Grammar School graduates are admitted to the Third Form.

Subjects of Instruction

ENGLISH

English B. LITERATURE. Hawthorne, "True Stories"; Dickens, "Dombey and Son"; selections from Lamb's "Tales from Shakespeare." LANGUAGE AND COMPOSITION. Dictation, oral and written reproduction and original compositions, punctuation, spelling and memorizing of good literature.

English A. LITERATURE. Reading from Old Testament; Macaulay, "Lays of Ancient Rome"; Lowell, "Vision of Sir Launfal." COMPOSITION. Weekly themes, letter writing, spelling, oral expression, memorizing.

English 1 (5)*. APPLIED GRAMMAR. Spelling, punctuation, dictation, letter writing. LITERATURE. Irving's "Sketch Book"; Scott's "Marmion"; Longfellow's "Courtship of Miles Standish."

English 2 (5). APPLIED RHETORIC. Oral Expression. Bunyan's "Pilgrim's Progress"; Homer's "Iliad"; Eliot's "Silas Marner"; Stevenson's "Treasure Island"; Coleridge's "The Ancient Mariner."

English 3 (3). COMPOSITION, WRITTEN AND ORAL. LITERATURE. Addison's "Sir Roger de Coverley Papers"; Tennyson's "Idylls of the King"; Shakespeare's "Merchant of Venice," "Julius Caesar." REVIEW OF GRAMMAR.

English 4 (3). COMPOSITION, ORAL AND WRITTEN. LITERATURE. "Macbeth"; "L'Allegro," "Il Penseroso" and "Comus"; Washington's "Farewell Address"; "Webster's Bunker Hill Oration"; Macaulay's "Life of Johnson"; Palgrave's "Golden Treasury."

* Numbers refer to hours a week.

FRENCH

French B. In this class an attempt is made to acquaint younger boys with some of the elements of French, such as the pronunciation of simple words and construction of easy sentences.

French A. French A is a continuation of French B and is directed along the same general lines. In these classes boys are prepared for the serious study of French.

French 1 (5). Chardenal's Complete French Course. French Life (Allen & Schoell), Malot's Sans Famille, La Bedollière's La Mère Michel et Son Chat, etc.

French 2 (5). Chardenal's Complete Course. Vocabularies, Idioms and Verbs. Blanchaud's Idioms. Buffum's Short Stories, About's Le Roi des Montagnes, La Brete's Mon Oncle et Mon Curé, Sand's La Petite Fadette, etc., are read. Some three hundred pages are translated.

French 3 (5). Fraser and Squair Grammar. Blanchaud's Idioms. Francois Composition. Vocabularies and Verbs. Texts: Scribe's le Verre d'Eau; Sardou, Les Pattes de Mouche, Les Boulinard; Loti's Pêcheur d'Islande, Vigny's Cinq Mars, etc., are read. Over three hundred pages are translated.

French 4 (5). French 4 is a parallel course to French 3. More difficult texts are read; grammar and composition are emphasized.

GERMAN

German 1 (5). This course lays a good foundation for upper class work in German. Harris' German Lessons or an equivalent book is used for grammatical work and exercises. About one hundred and twenty-five pages of German are read in this class.

German 2 (5). Bacon's Elements of German is used as the grammar. The composition exercises are numerous. Verbs and vocabularies written daily. Texts: Rosseger's Lex von Gutenhag, Gerstäcker's Irrfahrten, Germelshausen, Der Wilddieb, Ernst's Asmus Sempers Jugendland, etc., are translated. Some three hundred pages of text are read.

German 3 (5). Joyes-Meissner German Grammar. Pope's German Composition. Vocabularies and verbs. Texts: Sudermann's *Frau Sorge*, Schiller's *Der Neffe als Onkel*, Goethe's *Egmont* and equivalent texts. Kron's *German Daily Life*. Over three hundred pages of text are translated. During the Spring Term much stress is laid on written exercises and grammar drill.

German 4 (5). German 4 is a parallel to German 3. The texts to be translated and the composition work are of a more advanced character.

SPANISH

Spanish 1 (5). Coester's Spanish Grammar is used. The vocabularies and verb drill begin early in the course. Text: Part of *Spanish Daily Life*, Padre Isla's *Gil Blas*, *El Capitan Veneno*, *El si de las ninas*, *Tres Comedias modernas*, etc.

Spanish 2 (5). Coester's Spanish Grammar, or Hill and Ford's Grammar. Much attention is devoted to vocabulary and verb drill and composition. *Spanish Daily Life*. Text: Valdes' *José*, *Don Quijote*, Galdós' *Marianela*, Valera's *Pepita Jiménez*, etc., are read. Some three hundred pages of Spanish are translated.

LATIN

Latin A (2). An introductory course to Latin.

Latin 1 (5). BEGINNERS' LATIN. First year Latin lessons complete. Easy Latin prose.

Latin 2 (5). CAESAR, SALLUST AND LATIN COMPOSITION. Review of constructions, forms and application of rules of syntax.

Latin 3 (5). CICERO'S ORATIONS AGAINST CATALINE, for the Manilian Law, for Archias. Grammar. Composition. Translation at sight from Caesar and Sallust.

Latin 4 (5). VIRGIL'S AENEID. Translation at sight from Ovid, Sallust and others. Composition.

HISTORY

History B. ELEMENTARY UNITED STATES HISTORY completed.

History A. ENGLISH HISTORY. Review of United States History; Civics.

History 1 (3). Introductory course in ENGLISH HISTORY.

History 2 (5). ANCIENT HISTORY. The ancient world to 800 A.D. Emphasis is placed on the life, literature, art and political, social and religious institutions of the foremost nations, as these have influenced modern civilization. College requirements.

History 3 (5). UNITED STATES HISTORY. Includes enough of English history to enable one to understand American. Emphasis is placed on the careers of eminent men, on civic legislation and on territorial and constitutional expansion. College requirements.

History 4 (2). INDUSTRIAL HISTORY. The aim is to acquaint the student with the great sea routes and ports, the products transported; the changes produced by wars, steam and electricity in the long period covered by ancient, mediaeval and modern history.

MATHEMATICS

Mathematics B. Review of Fractions. Practical Measurements. Percentage and its applications.

Mathematics A. Arithmetic completed. Observational Geometry. Introduction to Algebra.

Mathematics 1 (5). ALGEBRA I. The essential operations of algebra to quadratics. The emphasis is on the fundamental principles.

Mathematics 2 (5). ALGEBRA II. Covers the college entrance requirements.

Mathematics 3 (5). PLANE GEOMETRY. The five books. A large number of original exercises.

Mathematics 4 (3). SOLID GEOMETRY. The standard theorems in solid and spherical geometry. Stress is laid upon numerical exercises involving mensuration of solid figures.

Mathematics 5 (2). PLANE TRIGONOMETRY. Logarithms. The solution of right and oblique triangles. Goniometry.

Mathematics 6 (5). REVIEW OF ALGEBRA AND GEOMETRY. This course covers the requirements of Algebra and Geometry for college entrance.

Mathematics 7 (3). APPLIED MATHEMATICS. Practical applications of algebra, geometry, physics, trigonometry, logarithms, slide rule and graphs.

Mathematics 8 (2). ARITHMETIC. A course covering the essentials of practical arithmetic.

SCIENCE

Science B. (A) Review of Elementary Geography. Physical and political geography of United States, other countries of North America, and the countries of Europe. Drill in map drawing and use of outline maps.

(B) PHYSIOLOGY AND HYGIENE. The skin; bones; muscles; exercise; digestion; circulatory system; organs of respiration and speech; excretion; nervous system; special senses, accidents, emergencies and contagious diseases.

Science A. (A) Physical and political geography of countries of South America, the West Indies, Asia, Africa, Australia, Malaysia and the other islands of the Pacific. Drill in map-drawing and use of outline maps.

(B) GENERAL SCIENCE. Some elementary physical ideas with experiments, elements of Botany, Astronomy, Physiography.

Science 1 (2). A course in ELEMENTARY SCIENCE dealing with the common things of life. The course is arranged as an introduction to science and is intended to give one a broad and helpful view of the physical sciences.

Science 2 (5). PHYSICS. Recitation and laboratory work covering preparation for college. Constant drill in the solution of problems involving the elementary principles of Physics.

Science 3 (5). INORGANIC CHEMISTRY covering the work of preparation for college: recitations, lectures, demonstrations and laboratory work. Independent work, observation and reasoning are insisted upon.

Materials (2). The various materials used in machines and in the construction of buildings and engineering projects are considered, and their various properties discussed.

Mechanics 1 (3). An elementary course in the fundamental principles of machines, statics, stresses, and dynamics, designs of structures, force, determination of center of gravity, momentum of inertia, and similar problems.

MANUAL ARTS

Wood-Working 1 (4). Bench work in wood with tools, from drawings made by the student.

Wood-Turning 2 (4) and general speed lathe work from standard designs; patternmaking.

DRAWING

Several drawing courses are offered. These are classed as Mechanical Drawing, Machine Drawing, Architectural Drawing and Freehand Drawing.

The students electing either Machine or Architectural Drawing must first complete the required work of the MECHANICAL DRAWING course. The instruction covers all the necessary fundamentals, such as lettering, geometrical problems, orthographic projection and development and intersection of surfaces. Much attention is given to the proper use of the various drawing instruments.

The MACHINE DRAWING course teaches one to make detail and assembly drawings properly. Instruction is given in free-hand sketching as applied to machine drawing. The student learns how to draw cams and gears. Especial attention is given to the methods employed for the production of a tracing or well-linked drawing.

ARCHITECTURAL DRAWING students are given thorough instructions in isometric projection and perspective, building details, classic mouldings, the orders of architecture, shading and rendering in pen and ink and water color. Several original designs are required for a proper completion of the work of the course.

The work in FREEHAND DRAWING includes instruction in pencil, pen and ink, charcoal and water color. Work may be pursued along various lines, such as cartooning, interior decoration, furniture design and sketching.

ELECTRICITY

Electricity 1 (2). The subjects taught in this course are broadly covered by the general titles; wiring methods, batteries, bells and annunciators, spark coils and ignition devices.

Electricity 2 (4). Among the subjects considered: dynamo machinery, direct current motors, distribution of power, electric lighting, etc.

Electricity 3 (4). Elements of alternating currents, alternators, transformers, motors, conversion of A.C. to D.C. electrical measurements, etc.

BUSINESS SUBJECTS

Economics. The fundamental principles of economic theory, with special reference to American conditions. From current magazines and newspapers, clippings are made of those subjects bearing on the text. An outline of each day's work and wise discussion on the topics of the day make the course interesting and profitable.

Spelling. Writing the words out carefully serves to fix them clearly. Scientific tests enable a pupil to determine his ability to spell. Pronunciation, enunciation and definition are emphasized as well.

Penmanship. Instruction in position, movement, speed and form. Legibility and speed are required by the employer; the student should acquire ease and endurance for his own sake.

Commerce and Industry. The raw materials of commerce, their sources, manufacture, transportation. Reports on assigned topics, illustrated lectures and observation trips to industrial plants. Exhibits of the products of many industries.

Business Arithmetic and Rapid Calculation. A review of elementary principles, followed by a detailed study of fractions, decimals, percentage, interest, bank discount, commission, pay rolls, fire insurance, grain, lumber, etc. Required in the first year of the four-year commercial program and in the two-year commercial course for high school graduates.

Business Mathematics. A detailed study of partial payments, savings bank methods, discounting commercial paper, wages, and pay rolls, depreciation, insurance, taxation, individual proprietorships, partnerships, corporations, stocks and bonds, insolvency and bankruptcy, consignments and commissions, and farm records; logarithms and the use of the slide rule.

Bookkeeping 1. A review of the arithmetic needed in bookkeeping, a study of buying and selling, recording purchases and sales, paying for goods, collecting bills, commercial discounts, construction of accounts, taking inventory, gross trading profit, a detailed consideration of business forms; the working of elementary bookkeeping sets.

Bookkeeping 2. A number of bookkeeping sets illustrating ownership, partnership and corporation accounts. Modern accounting methods as applied to retail, wholesale, and commission business. Particular attention to principles underlying the construction of accounts and their classifications, and to the preparation and interpretation of balance sheets and profit and loss statements.

Bookkeeping A. The elementary principles of bookkeeping are covered by means of lectures and the working of

a number of simple bookkeeping exercises. Particular attention is given to the principles underlying the construction and classification of accounts, and to the preparation and interpretation of balance sheets and profit and loss statements.

Accounting I. A comprehensive study of balance sheets and profit and loss statements of various kinds; of depreciation reserves, surplus, sinking funds, and the elements of cost accounting. An opportunity to work up a set in cost accounting for students who have the ability and the time.

Shorthand I. The Benn Pitman method of shorthand is taught. The principles of shorthand are mastered and a speed of approximately sixty words a minute is attained at the end of the year.

Shorthand II. A quick review of principles, followed by dictation of business and general matter until a speed of one hundred words a minute is attained. The student obtains actual office practice before being graduated.

Typewriting I. The "Touch" method of typewriting; the mechanical features of the machine are taken up in progressive order. Typists are thus sure of bringing into use early in their training all the time-saving devices. A speed of from thirty to forty words a minute can be acquired.

Typewriting II and Office Practice. Required in the four year secretarial course. Advanced speed work in typewriting is first taken up. The student is then taught how to tabulate, make carbon copies, cut stencils, how to use the mimeograph, how to file alphabetically, numerically and geographically. Enough transcription from shorthand notes to insure letters properly paraphrased, punctuated and spelled.

Commercial Law. The elements of business law, given in the last year of the four-year course, covering such subjects as contracts, agency, sales, bailment, negotiable instruments, partnerships, and corporations. The intent is only to keep out of pitfalls and to know when professional services are necessary.

English III. Technical. Oral and written composition; a general review of punctuation, the correction of faulty sen-

tences; the study of the form and arrangement of business letters; the reading of literature especially helpful to commercial students.

English IV. Technical. A general review of punctuation, the correction of faulty sentences and the study of the preparation of themes in exposition of technical and commercial subjects. In both oral and written composition special emphasis is placed on scientific subjects.

BIBLE INSTRUCTION

Bible instruction is offered once a week; attendance is required of every boy. The School is non-sectarian. No attempt, therefore, is made to bias the student, the only objects being to inspire respect for the teachings of the Bible, and to familiarize the student with its contents.

MUSIC

The School has on its faculty a skilled teacher of music, who has charge of the chorus and the general musical features of the School.

Huntington Summer School

THE summer session of the Huntington School opens July 1, 1919, and continues for ten weeks. The aim of the School is to provide tutoring and class instruction for those who are conditioned in grammar school, high school, or college subjects, for those who wish to complete a four-year high school course in three years, and for those who wish to make special preparation for the entrance examinations to Harvard, Massachusetts Institute of Technology and the other New England colleges.

All of the courses usually offered for admission to college are scheduled.

The teaching force is made up of men of the regular school faculty.

During the summer of 1915 one or more boys entered each of the following schools: Harvard, Yale, Dartmouth, Boston University, Tufts, Massachusetts Institute of Technology, and Massachusetts Agricultural College.

The courses are so conducted that much individual instruction is given. It is possible, therefore, to accomplish a great deal during the session. At the opening of the term the student announces his plans, and every effort is made to have him realize them.

The tuition rate is \$50; \$30 payable upon entering, and the balance at the beginning of the fourth week.

A special circular of this school will be forwarded upon request.

Summer Camps

THE Headmaster is in touch with summer camps, located both inland and on the coast, where many of our students spend their summers. Information about them will be gladly given.

Educational and Vocational Guidance

THE graduate of any school or college, upon seeking employment, is asked by a cold, critical world, two searching questions: "What can you do?" "How well can you do it?" How these are answered determines his standing in society, income, comforts, and fullness of life. It should be the business of schools to so advise students and so plan their work that when they have completed the course of study they can answer these questions satisfactorily.

At Huntington no attempt is made to decide for the student what occupation he should choose, but every effort is made to help him come to true conclusions for himself.

We seek to enable the student who will continue his education beyond the secondary school stage to select intelligently and as early as possible the vocation in which his interests, natural aptitudes, and abilities will make him most successful, and to direct his course toward it; to advise the student who does not expect to enter a higher institution of learning of the fields of labor best suited to his training, his ability and inclinations, and to provide suitable courses for a number of such vocations.

Financial

The Your attention is called to a change in the tuition charges. Students who were enrolled in the school for the year 1918-1919 may continue at the rates in effect when they entered, providing registration takes place before July 1. All new students admitted for the year 1919-20 will be charged according to the following rates:

5th and 6th years.....	\$250.
Forms 1, 2, 3, 4, 5 and senior.....	\$300.
One year Technical Course.....	\$150.
Special Machine Drawing Course.....	\$100.
Architectural Drafting Course.....	\$150.

The School is operated at cost. The tuitions received are used almost entirely to pay for instruction.

The tuition fees are payable in advance, three-fifths at the time of entrance and two-fifths on or before January 1st. Students entering before November 15 are charged from the beginning of the school year.

A registration fee of \$5 is due from all new students when a place is reserved. It is a part of the tuition and will be credited on the first payment. When once paid it will not be refunded. To insure a place in the School, registration should be made before September 1st.

When an applicant enrolls in the School, it is understood, unless otherwise specified, that he enrolls for the entire year, and is liable for the tuition for that period.

Books and Supplies All students buy their own books and supplies. This material can be purchased from the book store.

**Mechanical
Drawing**

Students enrolled in the drawing courses pay a fee of \$1 to cover the cost of materials and the use of instruments.

**Manual
Training**

Students who take manual training are charged with the material used when the articles made are removed from the department.

Chemistry

Owing to increased cost of chemical supplies, in many instances five to ten times the cost in normal years, a fee of \$5 will be charged all students taking chemistry.

**Huntington
Student
Association
Fee**

All students pay a fee of \$10. This secures membership in the Huntington Student Association and provides the funds for the major social and athletic activities of the School. The school paper is also published with this fund.

Graduation

All students graduated from the School are charged \$5, which covers the cost of the diploma and expenses incidental to graduation.

**Students'
Tickets**

Students who live in suburban towns can secure railroad tickets at greatly reduced rates by applying at the office of the railroad.

SCHOLARSHIPS

A LIMITED number of scholarships are available for pupils of exceptional ability who are otherwise acceptable to the school. Fitness of applicants will be determined by written and oral examinations and by the applicant's previous school record. Complete information will be furnished on request.

THE HUNTINGTON CLUB

THIS club, known among the boys as the "O. K. Club," consists of those students who meet the requirements of a three-fold standard. They must be physically sound, mentally alert, and morally straight. In addition, they must possess some notable ability in one direction or more. Boys who qualify for the scholarships mentioned above would be eligible also for the Huntington Club.

References

Henry S. Adams	55 Union Terrace, Jamaica Plain
Frederick W. Allen	203 Summer Ave., Reading
Dr. Marshall H. Bailey	1569 Mass. Ave., Cambridge
Rev. Austen K. deBlois	1411 Beacon St., Brookline
Henry W. Davenport	139 South St., Boston
Hiram A. Gillett	72 College Ave., W. Somerville
Robert Grant	105 Fair Oaks Park, Needham
Edward E. Gage	Canton, Mass.
Prof. Heinrich O. Hofman	88 Robinwood Ave., Jamaica Plain
Warren T. Hollis	139 South St., Boston
Harry H. Humphrey	25 Meredith St., W. Roxbury
D. Willard Leavitt	49 Maple St., Roxbury
Dr. Walter C. Miner	26 Columbia Road, Dorchester
James H. Morrison	81 Orchard St., Belmont
Albert P. Morse	10 Upland Road, Wellesley
Frank W. Padelford	9 Allerton Road, Newton Highlands
Henry B. Pennell	Cohasset
Frank C. Shepherd	22 Littell Road, Brookline
George A. Stetson	Sharon
Ralph H. Wight	3 Dudley St., Reading
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CHAMBERLAIN, NEWELL BURNAP

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ELDREDGE, ADDISON ELWELL

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FINELLI, JOHN

GODDU, PAUL DUDLEY

HIGGINS, ERNEST RUSSELL

IOVANNA, NICHOLAS

JACKSON, ROBERT E.

LAMSON, HAZEN FRANCIS

LANGILL, HENRY PRAY

* Deceased.

MACDONALD, WILLIAM FRANCIS

MANNY, CARLOS CONSTANTINE

MILLER, ALAN

MORSE, GILEAD D.

* NYE, RAYNOR BASSETT

PARRETT, CHAUNCEY GILDERSLEEVE

SALT, GEORGE EGERTON

SKINNER, ROBERT ARTHUR

SMITH, RODERICK B.

TAYLOR, ANDREW WILLIAM

TULLY, FREDERICK JOSEPH

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WEBSTER, NORWOOD

WERMUTH, EUGENE FRANCIS

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WILKINS, HERBERT I.

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CARPER, HAROLD GOODRICH
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CLEVELAND, THOMAS VOSE
CREED, FRED NELSON
DAY, ROLAND WIGHT
DICKSON, ROBERT WEBBER
DRISCOLL, WILLIAM FRANCIS
GILLET, CLIFFORD KEENE
GRAHAM, FRANCIS JOSEPH
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HARPER, ELMER BRUCE
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JACKSON, HAROLD CUMMINGS

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MORSE, WILLIAM MCQUILLEN
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PRESTON, BURNHAM GODDU
REID, WILLIAM JOSEPH
SHEPARD, WINTHROP RUSSELL
SHORT, RALPH WILLIAM
SNOW, LAWRENCE FORRISTALL
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TAFT, LORADO EDSON
TALMADGE, NELSON ALCORN
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WALKER, LOTHROP EARL
WHITE, EDWARD ALDRICH

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CONNOR, JAMES EDWARD
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FITTS, ROSCOE WILLIAM
GALLAGHER, ERNEST FRANCIS
GRANT, DONALD LIVINGSTONE
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ROBART, FRANCIS HAROLD
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SWAIN, KENNETH FOSTER
TAUSSIG, FELIX, JR.
WOLF, JACOB ROBERT

Register of Students

Abbott, Herbert Whipple	Dorchester
Ackerman, Robert Mair	Brookline
Adams, Barrett	Jamaica Plain
Adams, Clayton Comfort	Cambridge
Adams, John	Cambridge
Adlard, Edward Livingstone	Dorchester
Akerley, Ernest Lester	Beverly
Allen, Lawrence Warren	Reading
Allis, Abbott Hastings	Wrentham
Andreasen, Albert	Woburn
Andrews, Halsey Irwin	Boston
Arnold, William Henry	Brookline
Ascher, Maxwell Abner	Roxbury
Ashcraft, Arle	Brookline
Bailey, Albert Eliot	Cambridge
Barber, Joseph Knowles, Jr.	Wollaston
Barlett, Stanford Justine	Cambridge
Bates, Arthur Stockbridge	Braintree
Berlind, Frederick Robert	Watertown
Besarick, Julian	Dorchester
Bevan, Charles Ormond Rea	Melrose Highlands
Bigelow, Louis Kimball	Natick
Bixby, Robert William	West Groton
Blaha, Carl Thurston	Dorchester
deBlois, Charles Austen	Brookline
deBlois, Laurier St. John	Brookline
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Brackett, Martin Richard	West Somerville
Bradley, Hayden Spaulding	Springfield
Bradley, Parker, Jr.	Danvers
Brandon, Orville Gerrish	Malden
Brooke, Percy Albert	Waverley
Broomell, Myron Henry	Sharon
Brown, Franklin Wonson	Winthrop
Brown, John Edgar	Chestnut Hill
Brown, Jack Van Buren	Brookline
Bruns, Ralph Fowler	West Roxbury
Bryant, Harold Hurlbert	Braintree
Burnham, Clark	Allston
Burnham, Dana Fuller	Allston
Burnham, William, 2nd	Allston
Burr, Malcolm Wolcott	Dorchester
Case, Robert Henry	Brookline
Chandler, Desmond Blight	Brookline
Chandler, Whitman Mitchel	Brookline
Chrimes, Sumner Meredith	Brookline
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Clark, Herbert Orrin	Somerville

Cleveland, Thomas Ebbert
 Coggeshall, Harrison
 Connor, James Edward
 Cook, Frank Brigham
 Cowan, William Robert
 Crawford, Robert Barnes, Jr.
 Croscup, Edward Everett
 Crowell, Howard Gardner
 Cushing, Herbert, Jr.
 Cutter, Charles Nelson
 Dahl, Wesley George
 Davenport, John Tolman
 Davis, Paul Harvey
 Dean, Arthur Spratt
 Dearborn, Albert Craig
 DeCoster, Phillip James
 DeRobertis, Francis
 Devlin, Edward
 Devlin, John Henry, Jr.
 Dik, Willard Blake
 Dodds, Oscar Harold
 Doherty, Thomas
 Dow, Kenneth Cushman
 Downes, Kenneth LaMonte
 Drew, Robert Morgan
 Duane, Marshall
 Dudley, Philip Dana
 Eaton, Elliott Fuller
 Ehrlich, Louis Hecht
 Ehrlich, Samuel Hecht
 Elliott, Elinus James
 Ellis, Ralph Kimball
 Emerson, Edwin Leslie, Jr.
 Engel, Carlton Bailey
 Evans, John Baker
 Farrington, Charles Williston
 Faulk, Terry Ruland
 Field, Daniel
 Fitts, Roscoe William
 Flamand, George Richard
 Fletcher, Norman
 Foljambe, Davis Forrest
 Fombaron, Jean Robert
 Forgie, James Brice
 Foster, Edward Stanley
 Foster, George Wallace
 Fowle, Norman Robinson
 Gage, Charles Knowles
 Gallagher, Ernest Francis
 Gillett, Clifford Keene
 Good, Herbert Shelley
 Gormley, Harold Reed
 Graham, Lorillard Adams
 Grant, Donald Livingstone
 Grant, Robert, Jr.
 Gray, Henry Warren, Jr.
 Greely, Cyrus Philip
 Greenleaf, Wendell Otis

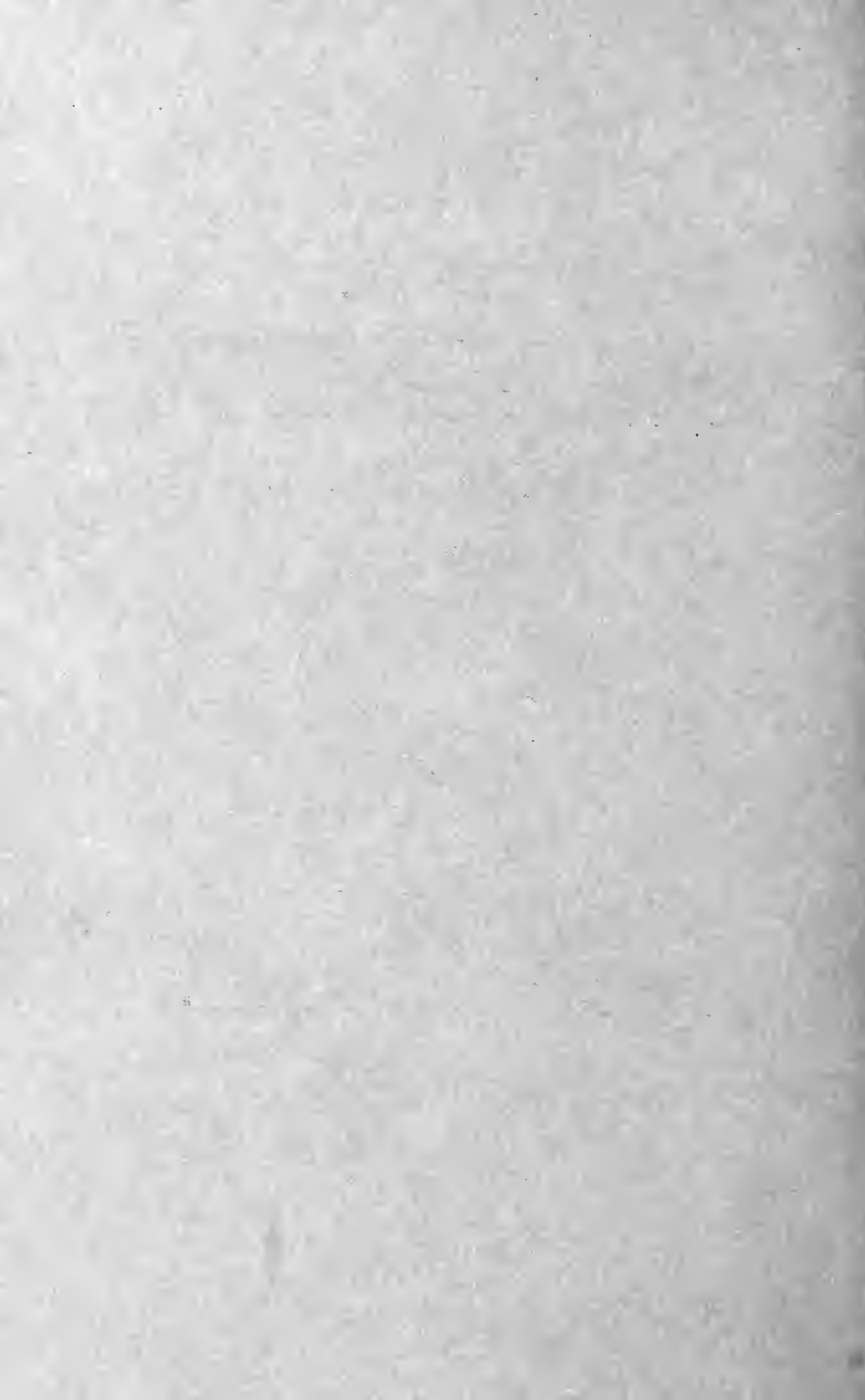
Malden
 Cambridge
 Lawrence
 West Roxbury
 Dorchester
 San Francisco, Cal.
 Needham
 New Bedford
 Campello
 Auburndale
 Braintree
 Braintree
 Cambridge
 Somerville
 West Somerville
 Roxbury
 Roxbury
 Dorchester
 Salem
 Needham
 Mattapan
 Somerville
 Newton Highlands
 Framingham
 Newton Highlands
 Brookline
 Haverhill
 Winchester
 Boston
 Boston
 Marlboro
 Everett
 Braintree
 Arlington Heights
 Salem
 Bedford
 Dover
 Sharon
 Brookline
 Cambridge
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 Jamaica Plain
 Boston
 Dorchester
 Winchester
 Roslindale
 Jamaica Plain
 Canton
 Somerville
 West Somerville
 Roxbury
 Brookline
 Brookline
 Needham
 Needham
 Charlestown
 Needham
 Auburndale

Griffin, Frank Joseph	Medford
Hailparn, Alfred Joseph	Brookline
Hall, Elisha Winthrop	Marshfield Hills
Hamilton, William Charles	Roslindale
Harper, John Edward	Dorchester
Hatch, Robert Maurice	Boston
Heath, Frederick Elbridge	Brookline
Hemenway, Ralph Walter	Needham
Hildreth, Herbert Alfred, Jr.	Dorchester
Hill, Alan Sherlock	Atlantic
Hoag, Roland Boyden	Dorchester
Hofman, Erik	Jamaica Plain
Holbrow, Charles Edwin, Jr.	Brighton
Hollis, Warren Thatcher, Jr.	Allston
Holmes, George Henry, Jr.	Cambridge
Holt, William Robert	West Roxbury
Hubbard, Clive	Brookline
Hutchins, Robert Lyman	Boston
Humphrey, Arthur Ross	West Roxbury
Huntington, Charles Edward	Boston
Hutchinson, William Clinton	Dorchester
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Irwin, George Clayton, Jr.	Dorchester
James, Stanley Rockhill	Brookline
Jernegan, Elliot Clifton, Jr.	Roxbury
Jetter, Frank Jacob	Boston
Joy, Hollis Lyons	Brighton
Kaffenburgh, Albert, Jr.	Brookline
Kaufman, LeRoy	Boston
Kent, Henry Northey	Marshfield
Kiggen, Thomas Ewen	Hyde Park
King, Pierce William Fowler	Swampscott
Koch, Robert Gordon	Brookline
Kronenberg, Nelson DeWitt	Cambridge
Larrabee, John Whitfield	Waverley
Lawrence, Leland Winfield	East Braintree
Leavitt, Albert Willard	Roxbury
Libby, Arthur Allen, Jr.	Reading
Lincoln, Arthur Earl	Hingham Centre
Long, Howard	Belmont
Lovell, Fred Ellsworth	Jamaica Plain
MacCurdy, Grant	Roslindale
McCarter, Kenneth	Allston
McIntire, Roger Warren	Medford
McIsaac, Lloyd	East Boston
McLeod, Robert Crofton	Winthrop
Mahoney, Paul	Allston
Manchester, Paul	Providence, R. I.
Marble, Cecil Carlton	Atlantic
Martin, Russell Arlington	Marblehead
Mayo, Phillip Huntington	Milton
Mehaffey, Graham Tyler	Brookline
Merrill, John Sherman	Brookline
Merrill, Lawrence Howe	Brookline
Meyer, Trenholm	Boston
Miner, Sheldon	Dorchester
Moffatt, Kenmore Walters	Dorchester
Moody, Henry Spencer	Brookline

Morrison, James Murray
 Morse, David
 Morse, Leonard Henshaw
 Morse, Milton Isaac
 Muir, Robert Bruce
 Muir, William Edmond
 Mulvenney, Joseph Todd
 Murphy, Thomas Williston
 Nash, Edwin Eugene
 Neas, Eugene
 Nelson, Edward Stelling
 Nelson, Howard Stanwood
 Newman, Richard Arno
 Nickles, Walter Irving
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 Smith, Farnham Wheeler
 Snelling, Howard, 2nd
 Snelling, Philip Rodman
 Steadman, Fred Cox
 Stetson, Richard Pratt
 Stevens, George Andrew

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 Brookline
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 Cohasset
 Winchester
 Winthrop
 Roslindale
 Allston
 North Woburn
 Quincy
 Arlington
 Jamaica Plain
 Boston
 Boston
 Boston
 Brookline
 Somerville
 West Somerville
 Winchester
 Winchester
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 Cambridge
 Dedham
 Dedham
 Cambridge
 Milton
 Dorchester
 Brookline
 Dorchester
 Winchester
 Concord
 Framingham
 Concord
 South Lincoln
 South Lincoln
 Brookline
 Sharon
 Brighton

Stoddard, Alexander, Jr.	Cobasset
Stokes, George Edward, Jr.	Boston
Strauss, Jack	Boston
Streeter, Horace Franklin	Wollaston
Sturgis, Harlan Milton	Boston
Swain, Kenneth Foster	Swampscott
Swift, Ward Cobb	North Scituate
Sydeman, Sumner Charles	Jamaica Plain
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Taussig, John	Brookline
Taylor, John Howard	Dorchester
Taylor, Norman	Wellesley
Taylor, Prescott Richardson	Winchester
Thresher, Seward	Wakefield
Tinkham, Robert Earl	Taunton
Tredinnick, John	Wakefield
Tyler, Norman Edwin	Roxbury
Wade, Edward Albert	Jamaica Plain
Waters, Henry Cook	Salem
Weden, O. Raymond	West Roxbury
Westcott, George	Fall River
Weston, Ezra	Allerton
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Whittier, Roger Knapp	Waban
Wight, Percival Atherton	Reading
Wildes, Edward Waldo	Waban
Williams, Robert	Chelsea
Wolf, Bernard Mark, Jr.	Boston
Wolf, J. Robert	Boston
Won, Wing	Boston
Wood, Abel Farnsworth	Dorchester
Woodcock, Ralph Tarr	Dorchester
Young, Edward Jonathan, Jr.	Wrentham
Young, Edmund Standish	Braintree
Young, Phillip Taylor	Quincy
Young, Perrin Whitley	Malden
Zahn, Gilbert Lewis	Brookline
Zahn, Theodore Clarence	Brookline



NORTHEASTERN PREPARATORY SCHOOL

**CATALOGUE
1919 - 1920**

Boston Young Men's Christian Association

NORTHEASTERN COLLEGE

OF THE

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION

SCHOOL OF LAW

Established in 1898; incorporated in 1904. Provides a four-year course in preparation for the Bar and grants the Degree of Bachelor of Laws.

SCHOOL OF COMMERCE AND FINANCE

Established in 1907; incorporated in 1911. Offers the following three and four year courses leading to the degree of B.C.S. (Bachelor of Commercial Science): Business Administration, and Professional Accountancy. Any one passing the examination for advanced standing is enabled to complete either of the regular courses and secure the degree in three years. Special courses in addition to regular courses.

CO-OPERATIVE SCHOOL OF ENGINEERING

Four-year courses in Chemical, Mechanical, Electrical and Civil Engineering, in co-operation with business firms. Students earn while learning. Open to High School graduates.

EVENING SCHOOL OF ENGINEERING

A school offering four-year courses in Chemistry, Chemical, Electrical, Structural, Railroad and Municipal Engineering.

SCHOOL OF LIBERAL ARTS

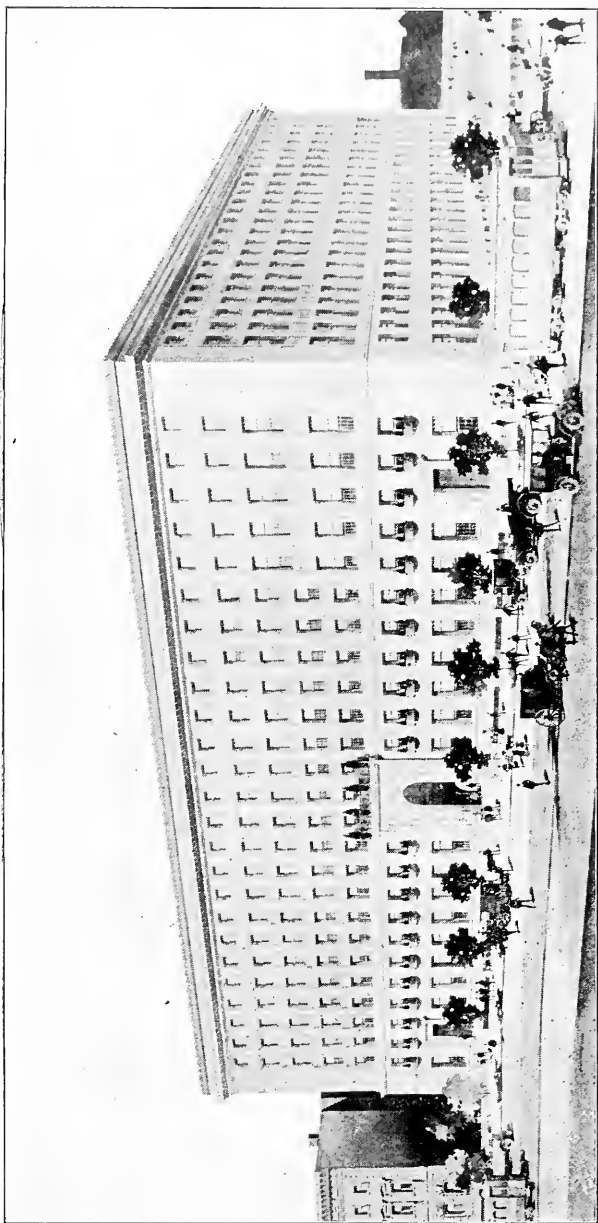
A school offering courses of college grade in English, Ancient and Modern Languages, Mathematics, Science, History, Economics, Government, Logic, Psychology, Education, Philosophy and Journalism. Professors and instructors of New England colleges are engaged. The first two years' work leading to the A. B. degree is given; also a two-year pre-medical and a pre-legal course. These courses will be open to graduates of high schools and to others who can meet the entrance requirements.

For further information concerning any of the above schools, address Northeastern College, 316 Huntington Avenue, Boston, Mass., or inquire at the Preparatory School Office. Tel. Back Bay 4400.

NORTHEASTERN PREPARATORY SCHOOL

1919 - 1920

PUBLISHED BY
EDUCATIONAL DEPARTMENT
of the
Boston Young Men's Christian Association
316 Huntington Avenue
Boston, Mass.



ASSOCIATION BUILDING

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Calendar

Fall Term—1919-20

Sept. 15-20	Registration
Sept. 22	Opening of Fall Term
Nov. 27	Thanksgiving
Dec. 22-27	Christmas Recess
Jan. 13-18	Examinations
Jan. 18	Close of Fall Term

Spring Term—1920

Jan. 19-24	Registration
Jan. 26	Opening of Spring Term
May 11-14	Examinations
May 14	Close of Spring Term

Summer Term—1920

May 17-22	Registration
May 24	Opening of Summer Term
May 30	Decoration Day
July 4	Independence Day
Sept. 6	Labor Day
Sept. 7-10	Examinations
Sept. 10	Close of Summer Term

Fall Term—1920-21

Sept. 20-25	Registration
Sept. 27	Opening of Fall Term

Northeastern Preparatory School

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(Harvard University)

Principal

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(Ohio Wesleyan University)

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(Harvard University)

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(Cornell University)
Civil Service

WILLIAM J. SANDS, A.M.
(Harvard University)
English

IRVING J. SCOTT, B.S., A.M.
(Dartmouth College) (University of Maine)
Mathematics

CHARLES F. SEAVERNS
(Harvard University)
Mathematics

EDWARD W. S. SMITH, A.B.
(Sheffield Scientific School)
Mechanical Drawing

ANNA F. PHANENSTIEHL
(Simmons College) (Boston University)
Typewriting

MARY R. RICE
(Chandler Normal School)
Shorthand

MAUDE L. McLEOD
Secretary

Northeastern Preparatory School

Northeastern Preparatory School, formerly called the Evening Preparatory School, was founded in 1897 to meet the demand for instruction by men who were employed during the day. Since then the School has grown steadily, until today it gives work of the same standard as that maintained by the best secondary day schools. The School has prepared a large number of men for Harvard, Yale, Massachusetts Institute of Technology, Brown, Boston University, Tufts, Dartmouth, Northeastern, and other colleges.

The enrollment has increased from fewer than fifty students, at the beginning, to one thousand. To keep pace with this growth, the School has gradually developed a large and efficient teaching force; to do more thorough and intensive work, it has standardized and carefully outlined the courses of study.

Mere numbers, however, afford no proper test of the worth of a school. That worth is determined rather by the quality of work the institution performs, and this in turn depends on the character of its teachers and its students. The staff of Northeastern Preparatory School are college and university trained men of large teaching experience who know, and are in sympathy with, the aims and purposes of the students. These latter constitute a body of earnest men who have entered upon their educational work as a part of the business of life, rather than as a social accomplishment, and they come in the main, from homes in which the habits of industry and economy are habitually fostered. They feel the necessity of increasing their vocational opportunities, and usually enter the evening school with definite aims for the future. Practically all the students are engaged in work during the day.

AIM

The aim of Northeastern Preparatory School is to prepare young men of intense purpose for college, scientific schools, or the advanced schools of Northeastern College, or to help them better their business positions. The subjects offered are those commonly given in the eighth grade of a grammar school and in the four years of a day high school. The amount of school work covered in each subject, during any two terms of sixteen weeks each, is the same as covered in a year of a standard day high school. This is made possible by the elimination of non-essentials, and by emphasis upon important points, and possible also because of the earnest attitude of our students.

EQUIPMENT

The location, surroundings and physical appointments of a school are of primary importance. The location should be healthful, accessible and attractive; buildings should be heated, lighted and ventilated so as to promote the health and progress of students at all seasons of the year.

The buildings occupied by Northeastern Preparatory School fulfill these requirements. Their location on Huntington Avenue, in a section of Boston noted for its institutions of learning, makes them accessible from all parts of the city and suburbs, and free from outside influences which distract the attention. On looking at the buildings from the front, one gains the impression of a single large, square structure, but there are in reality six buildings,—Administration, Assembly, Educational, Natatorium, Gymnasium and Vocational,—each on its own foundation, connected by corridors and bridges. This arrangement gives them all good light and air, and makes for close co-operation between the various units.

The equipment of the classrooms is excellent. The rooms are high-studded, airy, well lighted and ventilated, and comfortable in temperature both summer and winter. They have slate blackboards, roomy seats, individual desks, and wall tints that are restful to the eyes. The School is adequately supplied with maps and charts.

The laboratory equipment is thoroughly modern and is extensive enough to furnish material for many students working at the same time. There are three chemical laboratories and one physics laboratory. The mechanical drawing room is unusually large and has every convenience for work of all grades.

ADMISSION

Any young man of good moral character, regardless of occupation or creed, who has completed at least six grades of a grammar school course, or the equivalent, may enroll in the School.

Courses adapted to the needs and education of such applicants are offered each term. It is not advisable, however, for one younger than fifteen years of age to register, for the courses are adapted to those who are more mature, and are physically able to work during the day and to study at night.

COURSES OF STUDY

The School offers the following courses of study leading to a diploma:

Classical Course

Students who prepare for Harvard or for classical courses of other colleges are advised to select this course.

Required Units

English	4	Algebra	1½
Latin	3	Plane Geometry	1
Modern Language	2	Science	1

Elective Units

French	3	Physics	1
German	3	Chemistry	1
History	2	Solid Geometry	½

(A total of 17½ units is required for Harvard.)

Scientific Course

Students preparing for Massachusetts Institute of Technology or for other scientific schools are advised to pursue this course.

Required Units

English	4	Plane Geometry	1
French or German	3	Solid Geometry	½
History	1	Physics	1
Algebra	1½		

Elective Units

Chemistry	1	Mechanical Drawing	1
Elementary French	2	Elementary German	2
Advanced French	1	Trigonometry	1
Advanced German	1	Latin	2
Spanish	2	Biology	1

General Preparatory Course

Required Units

English	4	History	1
Foreign Language	2	Science	1

Elective Units

Advanced Composition	½	Geometry, Solid	½
Algebra	1½	Italian	2
Ancient History	1	Latin	3
Biology	1	Logic	1
Bookkeeping	1	Mechanical Drawing	1
Business English	1	Physical Geography	½
Chemistry	1	Physics	1
Commercial Arithmetic	½	Physiology	½
Commercial Geography	½	Public Speaking	½
Economics	½ or 1	Russian	2
English History	½	Shorthand (100 words a min.)	1
French	3	Spanish	3
German	3	Trigonometry	½
Government	1	Typewriting (40 words a minute)	½
Geometry, Plane	1		

Commercial Course

Required Units

Bookkeeping Course	or	Stenographic Course	
Bookkeeping	1	Shorthand	1
Commercial Arithmetic	$\frac{1}{2}$	Typewriting	$\frac{1}{2}$
Penmanship	$\frac{1}{2}$	English	4
English	4	Modern Language	2
Commercial Law	$\frac{1}{2}$	Commercial Law	$\frac{1}{2}$
Modern Language	2		

Elective Units

To be selected from courses given in the School to make a total of fifteen units.

Northeastern College School of Law

The Board of Administration of Northeastern College School of Law allows credit toward the requirement for the degree of LL.B. for work done in the Northeastern Preparatory School in the subjects listed below. For information as to points, credit and arrangement of schedule, Law School prospects are referred to the Board of Admission.

Required

English

Elective

Algebra	Government
Botany	Geometry
Chemistry	History
English	Latin
Economics	Logic
French	Phonography
German	Physics
Geography, Commercial	Psychology
Greek	Spanish

Northeastern College Co-operative School of Engineering

A student preparing for the Co-operative School of Engineering of Northeastern College should select his work to include

Required Units

Algebra	$1\frac{1}{2}$	English	4
Plane Geometry	1		

Elective Units

(8 $\frac{1}{2}$ units required)

Commercial Arithmetic	$\frac{1}{2}$	English History	$\frac{1}{2}$
Ancient History	1	French	3
Biology	1	German	3
Bookkeeping	1	Italian	2
Chemistry	1	Latin	3
Advanced Composition	$\frac{1}{2}$	Mechanical Drawing	1
Commercial Geography	$\frac{1}{2}$	Physics	1
Economics	$\frac{1}{2}$ or 1	Physical Geography	$\frac{1}{2}$

Physiology	$\frac{1}{2}$	Spanish	3
Public Speaking	$\frac{1}{2}$	Trigonometry	$\frac{1}{2}$
Russian	2	Typewriting (40 words a	
Shorthand (100 words a		minute)	$\frac{1}{2}$
minute)	$\frac{1}{2}$		

A student who graduates from Northeastern Preparatory School and has completed the above required units, with a rank of not less than C in Algebra, Plane Geometry, English and Physics, will be admitted to the Co-operative School of Engineering without examination.

Northeastern College Evening School of Engineering

A student preparing for the Evening School of Engineering of Northeastern College should select his work to include

Required Units

English	2	Algebra	$1\frac{1}{2}$
Plane Geometry	1		
Mechanical Drawing	1	Total	$5\frac{1}{2}$

Elective Units

($2\frac{1}{2}$ Units)

A student may select as elective work any of the subjects offered in the Preparatory School, but he is advised to offer units in English, Mathematics or Science.

Northeastern College School of Liberal Arts

Required Units

English	4	History	1
Algebra	1	Science	1
Foreign Language	2		

Elective Units

Seven are to be selected from the following electives, to make a total of fifteen units:

Advanced Composition	1	History	1, 2, or 3
Algebra	1	Latin	1, 2, or 3
Botany	1	Physiology	$\frac{1}{2}$
Chemistry	1	Physics	1
Economics	1	Plane Geometry	1
French	1, 2, or 3	Solid Geometry	$\frac{1}{2}$
German	1, 2, or 3	Spanish	1, 2, or 3
Government	1	Trigonometry	$\frac{1}{2}$

Graduates of Northeastern Preparatory School, who have pursued a course of study which includes the required subjects, will be admitted to the Freshman Class without examinations.

Requirements for Graduation

Students may graduate from any of the courses offered in Northeastern Preparatory School when they have completed fifteen units of work. A unit of work, as counted by the College Entrance Board, is the amount covered in a single standard subject during a year's work in a standard day high school, the equivalent of which is covered by this School in two terms of sixteen weeks each.

The list of courses that are described below form the entire offering of the school. Most of these courses are given every term; a few are given alternate terms or every third term. An announcement is made in advance of each registration period of the courses to be given during the following term, together with the days and hours that each class will meet. Any secondary school subject, however, will be given if six or more men wish to take it, even if it does not appear on the announcement or in this catalogue.

Subjects of Instruction

ENGLISH

The English courses are especially planned to develop broad, sound habits of thought, alert intelligence, direct and clear expression. The study of literature and composition is conducted on the line, though not of the degree of difficulty, followed in college rather than in high school, the lecture system is employed in preference to recitation, and the mature mind, accordingly, finds ample material for thoughtful and progressive effort.

Among the chief topics treated are the practical elements of composition and rhetoric, the nature of style, the origin and development of the chief literary forms, and the appreciation of English classics. Fundamental principles of thought and expression are emphasized throughout the course; thoroughness is insisted on. Pedantic technicalities are avoided; enthusiasm, understanding and persistence are fostered.

English Aa, Ab. Elementary course. This course is for those who need drill in elementary spelling, punctuation, grammar, letter writing and oral reading. The aim is to prepare a student for the first year course in High School.

English 1a, 1b. An introduction to the essentials of composition, emphasizing the practical problems in grammar, sentence structure, and direct expression. Emerson & Bender's *Modern English* (Book II) is used. There is also training in thoughtful and appreciative reading.

English 2a, 2b. The study and appreciation of literature. Books are carefully read to develop a knowledge of the literary and historical periods which they represent. An introduction to the best literature, both classical and modern, of England and America.

English 3a, 3b. Advanced composition, with emphasis on the principles of correspondence, exposition and argumentation. Much carefully supervised practice. Crawford's "The Study of English" is used. Selections from the best authors are introduced as supplementary reading and as models of style. This course may follow course 1ab.

English 3k. Special course in business English and commercial letter writing. May follow 3a in place of 3b.

English 3p. Special course in technical English for men engaged, or about to engage, in technical work or studies. May follow 3a in place of 3b.

English 4a, 4b. The study of special masterpieces of literature, particularly those required for careful study for college entrance requirements, supplemented by carefully selected lighter reading. Lectures, discussions and written reports.

English 4g. A course in general literature, intended to develop the ability to read with pleasure and profit and also to select reading intelligently. Some time is devoted to the discussion of the best literature being published today.

This course may be taken in two consecutive terms. It may be taken immediately after course 2ab.

English for Foreigners (English F). A practice course in speaking, reading and writing, designed for foreign-born men of some education, who have some knowledge of English, but wish for greater proficiency and accuracy.

LATIN

The courses in Latin are such as to fulfill the requirements of college entrance examinations. In the first year, they aim to give a foundation in grammar which will make possible and profitable the study of Latin texts in the other years.

Latin 1a, 1b. Smith's Latin Lessons. Easy Translations. Elementary Grammar.

Latin 2a, 2b. Caesar, Sallust. Latin Composition, Review of constructions and forms, and application of rules of syntax.

Latin 3a, 3b. Cicero's Orations Against Catiline, for the Manilian Law, for Archias. Grammar. Composition. Translation at sight of Caesar and Sallust.

Latin 4a, 4b. Virgil's Aeneid. Translation at sight from Ovid, Sallust and others. Composition.

FRENCH

The courses in French are planned with the purpose of giving to students (1) an appreciative comprehension of French, both as literature and as a spoken language; and (2) a sufficient knowledge to

fit them for advanced work in higher schools. The essentials of the grammar are thoroughly mastered by continued drill and constant application. The attainment of good pronunciation receives careful attention, and from the beginning the ear of the student is trained to understand spoken French.

French 1a, 1b. New Chardenal French Grammar. Selected readings. Special emphasis placed on pronunciation and the acquiring of a vocabulary.

French 2a, 2b. New Chardenal French Grammar. Special Composition work and selected readings. Students who complete both French 1 and 2 are prepared to take college entrance examinations in Elementary French.

French 3a, 3b. New Chardenal French Grammar. La-martine's *Révolution Française*; Selections from Maupassant, Th. de Banville, Meilhac et Halévy, and others; Koren's French Composition.

French 4a, 4b. Classic plays, and selections from Balzac and others; Victor Hugo's *Hernani*; Rostand's *Cyrano de Bergerac*; critical essays on France, its people and its literature.

SPANISH

Many young men, seeing the great opportunities in business with South American countries, feel that a command of Spanish is essential to their success. The Department, therefore, is prepared to give to the student a practical command of Spanish as a medium of expression.

Spanish 1a, 1b. Elementary Course. Conversation, correct pronunciation and ear training. Lacalle's *Elementos de Espanol*; Elementary Spanish-American Reader.

Spanish 2a, 2b. Continuation of Spanish 1. Grammar, conversation and composition, suitable text books.

Spanish 3a, 3b. Commercial Course entirely. Reading, writing, translating and conversing on commercial subjects; commercial correspondence, business terms, South American customs. A forceful and easy style of expression. Monsanto and Languellier's Grammar, A trip to South America and Spanish Daily Life.

Spanish 4a, 4b. Advanced Commercial Course. Grammatica Practica; Castellana; Harrison's Spanish Correspondence and Commercial Reader; Selections from Don Quixote; Spanish Literature.

ITALIAN

Elementary Course. Sauer's Conversation Grammar. Drill in pronunciation; conversation based on text; reading of Bowen and Fogazzaro.

GERMAN

The aim of the first year is to enable the student to acquire a correct pronunciation, to gain a complete mastery of fundamental grammatical forms and principles, and to get a vocabulary that will make it possible to read simple German texts intelligently.

In the second year the inflected forms and the principles of German grammar are thoroughly reviewed, the working vocabulary constantly enlarged, and exercises, both in composition and conversation, continued.

German 1a, 1b. Voss' Essentials of German, Guerber's Märchen und Erzählungen. Special emphasis is placed on pronunciation and the acquiring of a vocabulary.

German 2a, 2b. Study of grammar continued. Special attention to syntax. Selected readings. Students who complete German 1 and 2 are prepared to take college examinations in Elementary German.

German 3a, 3b. Becker's Deutsch für Ausländer; Wildenbruch's Das edle Blut; Baumbach's Die Nonna; von Lilencron's Anno 1870; Keller's Kleider machen Leute; Heine's Die Harzreise; Meyer's Das Amulett; German Composition.

German 4a, 4b. Schiller's Wilhelm Tell or Die Jungfrau von Orleans; Lessing's Minna von Barnhelm; Goethe's Egmont, Hermann und Dorothea, and critical essays on Germany, its people and its literature.

RUSSIAN

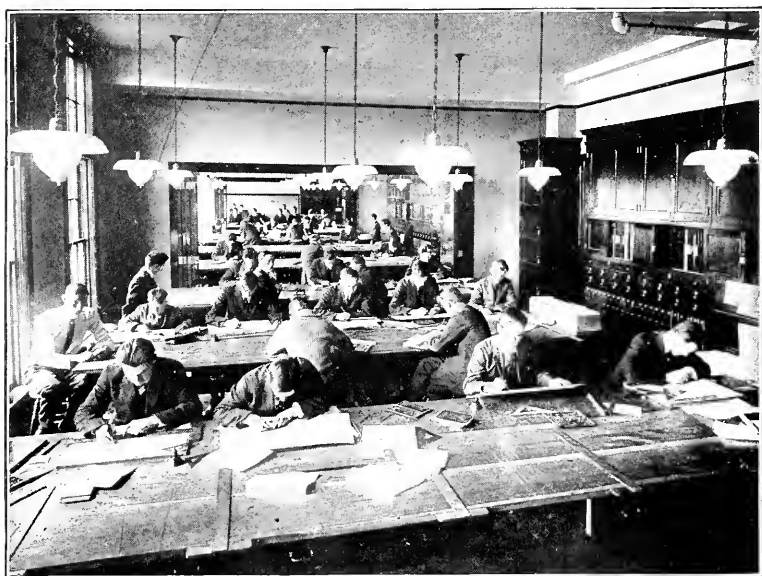
Elementary Russian. The aim of this course is to give the student a practical knowledge of the Russian language, the commercial significance of which is emphasized throughout the course.

HISTORY, GOVERNMENT, ECONOMICS

The aim of the department of History is to give a broad knowledge of vital conditions in the growth of the leading countries of the world. This includes the study, not only of important historical facts, but more especially of the processes of development in government, society, business, religion, and education. The past is studied that the present may be better understood.

History 1a. United States History (Elementary Course). This course is primarily for those students who have never studied American History. Its aim is to prepare one for a thorough study of United States History.

History 2ab. United States History. A careful study of the beginning and growth of the nation and its institutions, from a constitutional as well as political viewpoint. The origin and development of present day policies and political tendencies is carefully traced.



DRAFTING ROOM



RESTAURANT

History 3ab. European History. A comprehensive survey of mediaeval and modern European History, including English. A study of the development of the great races of to-day, particularly the Anglo-Saxon, Latin, Teutonic and Slavonic, and the tendencies that resulted in the recent great war.

History 4a, 4b. Ancient History. First Division is devoted to the history of Greece; the second, to the history of Rome. The course aims to place the principal emphasis upon the characteristic elements of these civilizations and the contributions which they made to modern civilization.

Government 1a, 1b. Course 1a is a careful study of our forms of national, state and local government. 1b is a study of European forms, particularly those of our Allies. Course 1a may be taken alone.

Economics 1a, 1b. A study of the production of wealth, trade development, prices and values, money, banking and exchange, transportation, labor and capital, public ownership, and kindred topics. Course 1a gives an introductory view of the subject and may be taken by itself. Course 1b is a more thorough study following 1a.

MATHEMATICS

The purpose of the courses is two-fold. (1) to make the student acquainted with such mathematical methods as are most likely to be useful in the study of other subjects and particularly in practical affairs; and (2) to give him a thorough training in such fundamental branches as shall furnish a sufficient basis for advanced mathematical studies.

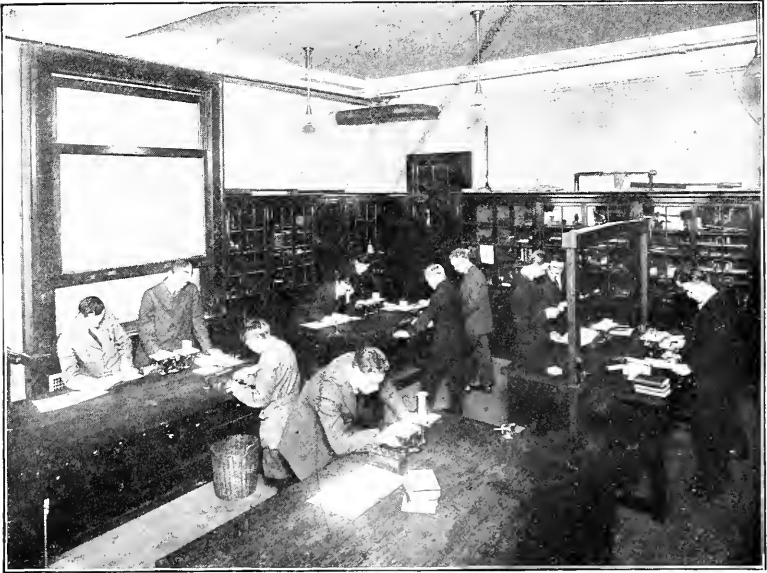
Arithmetic A. An elementary course on the four fundamental operations, factors, and simplex processes, in preparation for Arithmetic 1.

Arithmetic 1. A course in general arithmetic, including the most essential operations, with special emphasis on commercial and industrial methods and rapid calculation.

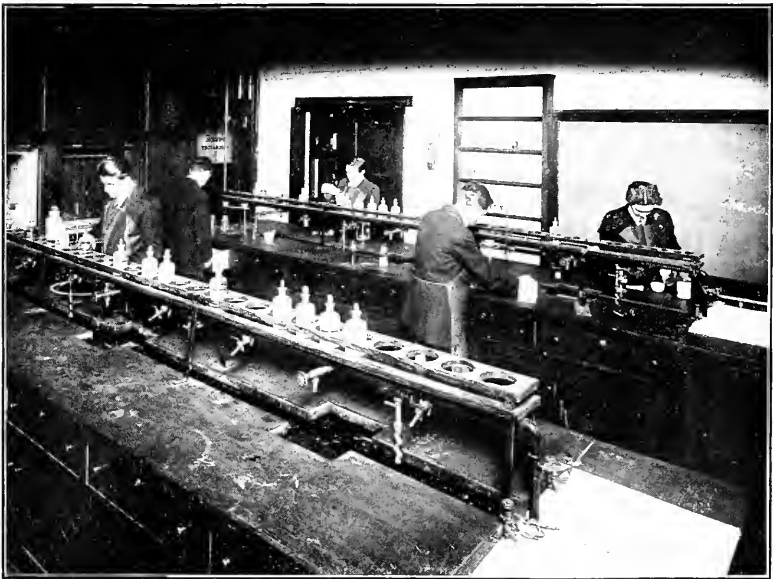
Algebra 1a, 1b. The essential operations of algebra to quadratics. The emphasis is on the fundamental principles.

Algebra 2a. Covers the college entrance requirements. Designed for students who have acquired the fundamental principles.

Plane Geometry 1a, 1b. The five books. A large number of original exercises stimulate the power to reason clearly and to derive logical proofs. Special attention is given to those who expect to take college entrance examinations.



PHYSICS LABORATORY



CHEMISTRY LABORATORY
(One of Three)

Solid Geometry 2a. The standard theorems in solid and spherical geometry. Stress is laid upon numerical exercises involving mensuration of solid figures. This course is intended primarily for those who are preparing for college.

Trigonometry. Intended for those who wish to offer trigonometry for college entrance, or for those who intend to take up engineering work.

DRAWING

Mechanical Drawing. A course covering all the necessary fundamentals, such as lettering, geometrical problems, orthographic projections and development and intersection of surfaces. Much attention is given to the proper use of the various drawing instruments. A credit toward college entrance will be granted upon the completion of plates 1 to 41, inclusive, and plates 43, 49, 51 and 53, in Sampson's "Mechanical Drawing and Practical Drafting." All the work is individual and admits of progress according to the student's ability.

SCIENCE

Physics 1a, 1b. The work offered in physics gives an introduction to the general subject. Mechanics, heat, magnetism, electricity and light are taken up, usually in the order named. The course aims to encourage in the student a habit of observation, and to develop his ability to think intelligently about simple physical facts, many of which are observable in everyday life. It should prepare any one who completes the work satisfactorily to pass the entrance examinations of any college.

Inorganic Chemistry 1a, 1b. The general purpose of this course is similar to that of Physics 1. The work is divided between lecture-room discussion and demonstration of the fundamental principles and facts of the science, on the one hand, and, on the other, experimental work in the laboratory by the students individually. This latter work is closely supervised, and the student is required to do his work neatly, observe results carefully, and endeavor to reason from these results to legitimate conclusions. He must also keep systematic records of this work, as directed. At least fifty experiments are performed.

Biology 1a, 1b. The structure of animals and plants, functions of organs, development of organisms, classifications. An outline of the more important biological theories, such as evolution, natural selection, variation, mutation and heredity, and the principles upon which modern hygiene and sanitation are based. Laboratory work.

Physiology and Hygiene 1a. The course includes a study of the structure, the various systems and organs of the body, and the observance of the laws of health.

Physical Geography 1a. The course gives a large amount of practical geographical information, bearing directly on the physical conditions that affect customs, occupations, and food distribution of the world.

Commercial Geography 1a. A study of the various countries, relative to their commercial intercourse. The student is made familiar with the principal waterways, cities, products, imports, exports, etc. The course is a continuation of History 1a.

COMMERCIAL SUBJECTS

Business Arithmetic and Rapid Calculation. The aim of the course is to secure a combination of speed and accuracy in the essential arithmetical calculations used in business. A thorough review of elementary principles is given, followed by a detailed study of fractions, decimals, aliquot parts, percentage, interest, bank discount, commission, pay rolls, insurance, brokerage, taxes, estimating grain and lumber supplies, and other practical phases.

Bookkeeping 1a. A course intended to train the student in the art of properly recording the simpler transactions of business according to the elementary principles of accountancy. The books used are the cash book, the purchases book, the sales book, the journal, and the ledger. After the first month the check book and bank book are introduced. The trading and profit and loss statements and statements of resources and liabilities are made as simple as possible and instructions are given with great fullness and detail.

Bookkeeping 1b. Trains the student to keep a set of books illustrating a wholesale business. At the beginning the firm consists of two persons; later additional partners are admitted. The business of a wholesale grocery house is represented, but the methods and practices set forth will apply to a wholesale or jobbing business in almost any other line, such as dry goods, notions, clothing, boots and shoes, hats and caps, men's furnishings, millinery, etc. The purpose of the course is to qualify the student thoroughly to keep any set of commercial accounts.

Commercial Law 1a. A course in the elements of business law, covering such subjects as contracts, agency, sales, bailment, negotiable instruments, partnerships and corporations. The intent of the course is only to help one to keep out of pitfalls, and to know when professional services are necessary.

Penmanship. Exercises in plain business writing. Legibility and rapidity are emphasized throughout the course.

Shorthand 1a, 1b. The course aims to give the student a mastery of the fundamental principles and the ability to transcribe approximately sixty words a minute. This attainment requires two terms of concentrated effort, and much outside practice.

Shorthand 2a. A quick review of principles is given, followed by dictation of business correspondence and general matter. A certificate is granted when the pupil acquires a speed of ninety or more words per minute, and ability to transcribe notes on the typewriter at the rate of at least twenty-five words per minute.

Typewriting. The "Touch" method is taught. This means a definite number of keys allotted to each finger, and all work to be done without watching the keys. To receive credit for the course, a speed of forty words a minute is required.

LIBERAL ARTS SUBJECTS

Students of Northeastern Preparatory School may elect such courses as

Government
Economics
Logic
Psychology
Biology
Advanced English Composition
Public Speaking

in the Northeastern College School of Liberal Arts, provided they are qualified to carry on the work. A description of these courses may be found in the catalogue of NORTHEASTERN COLLEGE SCHOOL OF LIBERAL ARTS.

ENGINEERING SUBJECTS

The following subjects, open to our students, are among those offered by Northeastern College Evening School of Engineering:

Advanced Mechanical Drawing
Practical Physics
Surveying and Plotting
Topographical Drawing
Highway Engineering
Elementary Electricity

For information about these and other technical courses the student should consult the catalogue of NORTHEASTERN COLLEGE EVENING SCHOOL OF ENGINEERING.

CIVIL SERVICE

The United States Government offers to the ambitious young man many advantages over private employment. It pays better salaries than do private employers for the same class and amount of work. No work day is missed, because of business conditions, and pay day is never delayed. Promotion is rapid, depending, of course, upon the individual, and advance is usually unhindered. The hours of labor are short, seven and eight hours being the general rule, and vacation allowances are liberal, 30 days being given in some branches of the service, and, in addition, 30 days sick leave, if needed. Again, employees are secure in their positions; permanency is assured during good behavior and efficient service. The regulations for Civil Service strictly forbid removal except for good cause, which must be stated in writing. Another advantage is the opportunity for advancement in commercial life. By using the spare time which a Civil Service position gives, one may prepare for better standing, either in other departments of the Government or outside of the service. No young man today need be deprived of a position which will relieve him from worry as to the security of it, and which, at the same time, will give him ample opportunity for recreation and self-improvement. Never has there been such a demand for men in Government employ as now.

How to Secure Appointment

The Civil Service Reform Act aims: (1) to procure, by means of competitive examinations, competent employees for the Government service; (2) to place Government positions beyond the control of politicians, thus making appointment depend upon fitness and not upon party affiliations; and (3) to give all an equal opportunity to attain government employment, and to keep their positions so long as they show themselves capable and faithful.

Success depends upon personal merit, political "pull" and personal influence no longer being of aid to the applicant. If an average of 70% or more is attained in the examination, the applicant becomes eligible for appointment. The higher he is marked, the more quickly will the applicant's appointment follow.

In appointments for both state and federal positions, men recently discharged from military or naval service are given preference.

Positions which the government must fill under Civil Service regulations cover a broad field, including the Post Office, Railway Mail, Revenue Service, Immigrant Bureau, book-

keeping and stenographic work in all departments, and a large number of positions requiring special industrial or technical experience and training.

The lower age limit for appointment varies from 17 to 21 in the various positions, and the upper limit from 35 to 55. Initial salaries vary from \$900 to \$3000 per year.

The office of the school endeavors to keep posted on all requirements and changes, and will gladly furnish information.

Preparation

In order to qualify for a Government position it is important, not merely to pass the examination, but to rank among the highest, hence careful preparation is requisite. The School, through competent teachers with a thorough knowledge of the requirements, and with time to devote to each student personally, is able to give the sort of instruction which will permit the earnest student to take his examination with assurance. No student is encouraged to present himself for examinations until he is thoroughly qualified.

New courses begin in February, May, and September. While students may enter the course at any time, those who devote at least two terms to the work have a much brighter outlook when they take the examinations.

BIBLE CLASSES

Arrangements may be made to give academic credit to students who do work of satisfactory grade in the courses in Bible Study given by the Department of Religious Work.

Tuition Rates

The rates are made for each subject, for a single term only, so that students are charged exactly in proportion to the instruction. A discount of 10% on all tuition rates is given when the fee is paid in full on enrollment.

Each Standard Academic Course, \$10.00.*

For rates for Shorthand, Typewriting, Civil Service, and special extra time courses apply at the office.

The foregoing rates are in addition to the Y. M. C. A. membership fee of \$2.00 per year.

The Laboratory fee for Chemistry is \$5.00, and for Physics \$2.50 for a term of sixteen weeks. A deposit of \$3.00 is made in Chemistry to cover breakage, the unused portion of which is returned at the close of the course.

* First half tuition due on entrance. Second half tuition due Nov. 15, March 15, or July 15, according to school term.

General Information

School Year

The school year is divided into three terms of sixteen weeks each. The fall term includes the period from September to February, the spring term from February to June, and the summer term from June to September.

The work is so conducted that in any two terms the student may complete a full year of high school work in any subject. By attending full calendar years, a four-year high school course can be completed in from three to five years, according to the schedule carried by the student.

Beginning classes are offered each term in a wide variety of subjects. It is possible for a student to enter the School at the beginning of any term, and to select courses suited to his individual advancement. A number of half courses and short courses are also offered each term.

Sessions

The school sessions are held on each week day evening, excepting Saturday, from 7 to 10 o'clock. A student's schedule may include 1, 2, 3, 4, or 5 evenings a week, depending on his selection. *As a rule, subjects are given two evenings a week.* It has been found that because the students are mature, and in earnest, they can do the work of the course in fewer recitation periods than is customary in a day high school, therefore, classroom work is concentrated and intensive. It must be remembered, however, that the major part of the work is done outside of the classroom.

Examinations

Examinations are held in all subjects at the close of each term. If a student pursues a course part of the term and then drops it, no record of his standing in that course is kept at the office. Students are advised, therefore, to pursue courses in full and take all examinations, since later, for college entrance or for business, they may need an official rating. While the scholarship of students is determined by means of examinations, regularity of attendance and faithful performance of required work are considered equally essential.

Term examinations are modeled after college examinations.

Attendance at at least 75% of the classes is required for admission to the examinations.

Preparation for College

Students who expect to enter college are advised to see the principal, who will outline the most economical way for the pursuit of a course. Students who maintain the grade of "B," or above, in any subject may be certified for college.

Vocational and Educational Guidance

It is the intent of the School to advise carefully all its students, so that the subjects for study selected shall be of most benefit to the student, in relation to his ultimate vocational aim, or to his more immediate educational purpose. The School realizes that some men come to it to get help in bettering their business positions, others to broaden their general education, and still others to be directed to a college or technical school. To each is given advice which will best meet his educational need.

Special Students

A number of our students do not expect to enter higher institutions of learning. To these students the School offers special courses, or combinations of subjects which will benefit them in the work in which they are engaged during the day. Special attention is called to the increasing number of short courses in special subjects.

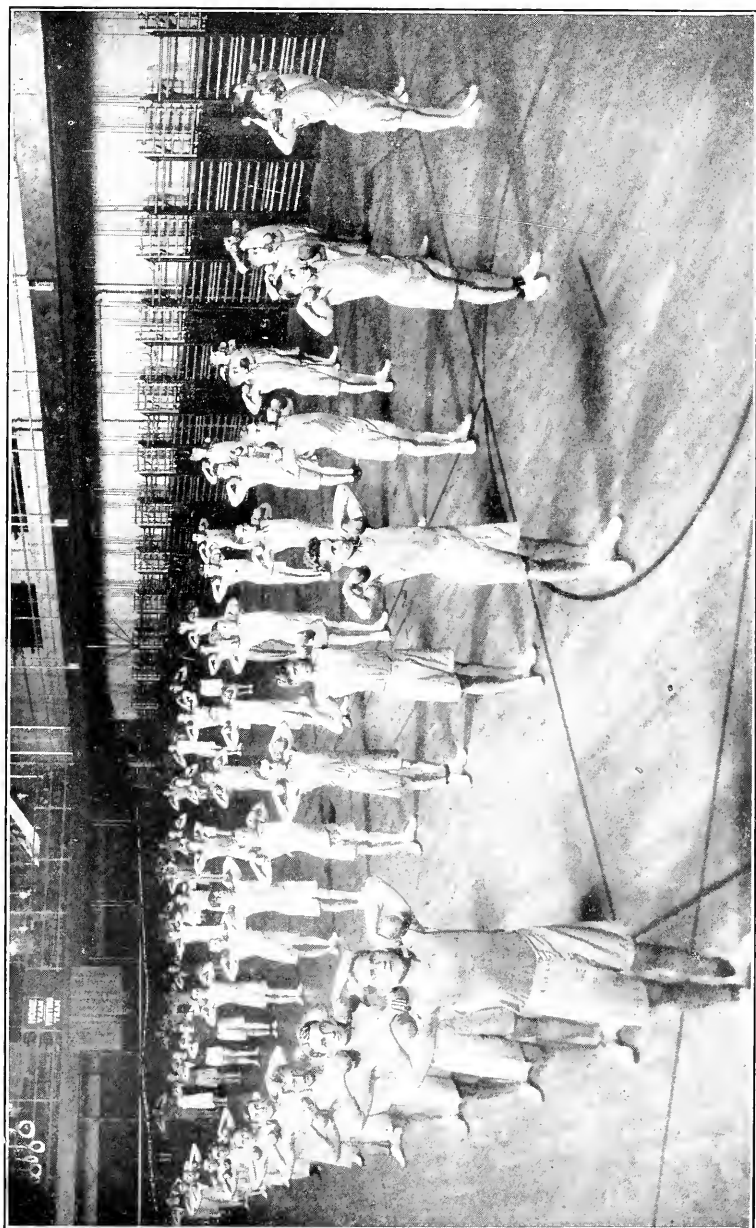
Scholarships

As an aid to worthy men who desire an education and are unable to pay in full even our slight charges, a limited number of scholarships have been provided, which will be judiciously distributed. Application should be made to the principal of the School.

In addition to these scholarships there are others in the schools of Northeastern College available for graduates of Northeastern Preparatory School. Each year a few graduates are granted free tuition for one year in the Law School, the School of Commerce and Finance, the School of Liberal Arts, the Evening Engineering School, or the Co-operative Engineering School. The value of these scholarships varies from \$50.00 to \$125.00. These are awarded to graduates who have pursued, in this school, ten of the fifteen units required for graduation, and have maintained a ranking of at least five A's and five B's. A further condition is that the student must enter the advanced school free of conditions.

Text Books

Students buy their own books. The book store keeps on hand all books and supplies used in the School. These are sold at a trifle above the wholesale price.



GYMNASIUM

Tutoring

Men come to us constantly for emergency preparation. While we do not encourage tutoring, since it cannot give so effective a preparation as classroom work, we are able, at \$1.50 to \$2.00 an hour, to furnish tutors in any preparatory subject, and in many other subjects not included in the curriculum. The members of the regular faculty, or of those from higher institutions of learning nearby, are frequently available for such work.

Libraries

The School has excellent facilities for study in the libraries and reading rooms of the Association, which are equipped with dictionaries, encyclopædias and special texts for carrying on the work of the School effectively.

Lectures

Many of the lectures offered by the Association are available to members of the School free of charge. These are given under the direction of the social and the religious work departments. Space does not permit detailed information about this important feature. However, special pamphlets, prepared by these departments, give the list of speakers and courses available, and may be obtained at the main desk of the Association.

Clubs

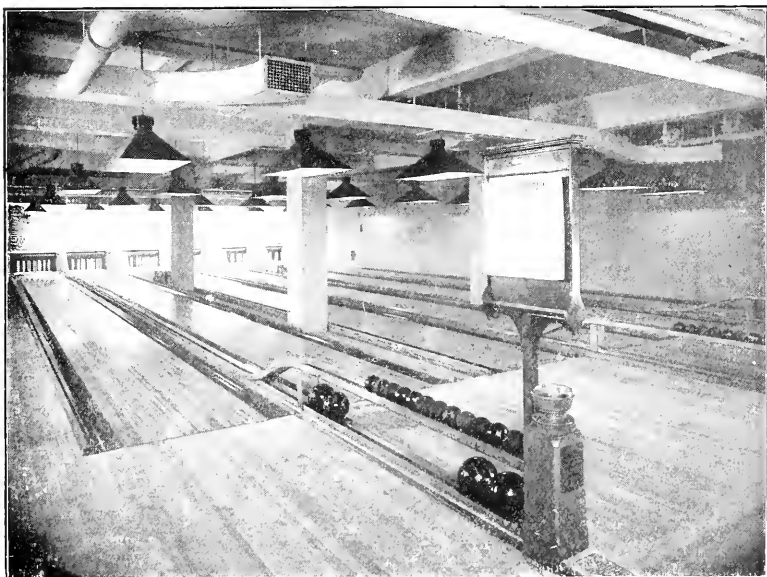
A large number of clubs are organized and conducted by the various departments, among which are the following:

Congress. A Congress is organized similar to the national body. Any one may become a member by adhering to the rules of the organization, and by naming the state he will represent. Members introduce bills and participate in the debates and discussions, and in this way gain experience in public speaking. We recommend that those who wish training in public address and in parliamentary practice join the Congress.

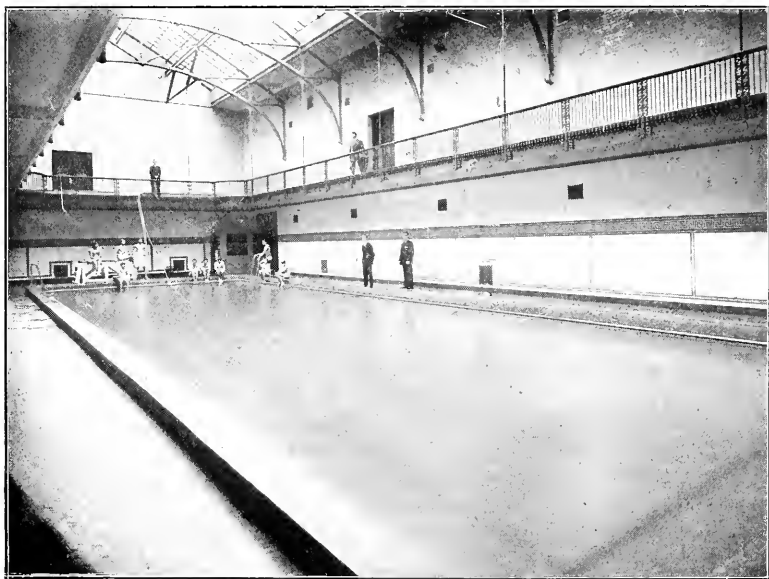
Orchestra. Those musically inclined are given an opportunity to join the orchestra. It is under the leadership of an experienced musician and conductor. The orchestra is in great demand throughout the activities of the Association, and finds many opportunities to make itself useful.

Moving Pictures

The Association has, in Bates Hall, a modern moving picture machine, which is used frequently to provide entertainment and instruction. Notable educational films are shown each year, which are worthy of the attention of the students. Much information can be received in this way in a short time.



BOWLING ALLEY



SWIMMING POOL

Students' Tickets

Students residing in suburban towns may travel on nearly all railroads at greatly reduced rates. Those under twenty-one years of age are eligible to receive so-called Student Tickets. Application for these rates should be made at the office of the railroad.

Dormitory Rooms

Students from a distance may secure rooms in the building. Excellent table board can be had also. The charge for rooms ranges from \$2.25 to \$4.25 a week; good table board from \$6.00 a week up. The rooms and dining facilities are under the direct management of the Boston Y. M. C. A. Students who room in the building are subject to the regulations of the Association.

Gymnasium

Students in the Northeastern Preparatory School may secure privileges in the Department of Recreation and Health at a small price per year, in addition to the annual membership fee. There are also special rates for men who wish the use of the pool and showers during the summer months only. Schedules of gymnasium and swimming classes may be obtained at the office.

Membership

All educational work is conducted as part of the larger activities of the Young Men's Christian Association. The annual membership dues are \$2.00. By paying this sum, one may enjoy, free of additional cost, many features of its extensive work. Such membership also gives one privileges in branches of the Y. M. C. A. in other American cities, subject to local regulations.

*The Northeastern Preparatory School,
316 Huntington Ave., Boston.*

*Please enroll me for the term beginning.....
in the following courses:*

.....
.....

Name.....

Date..... Address.....

*The Northeastern Preparatory School,
316 Huntington Ave., Boston.*

Please send me information about the following courses:

.....
.....

Name.....

Date..... Address.....

*The Northeastern Preparatory School,
316 Huntington Ave., Boston.*

*Please send me information about courses in Preparation
for..... My previous schooling has
been as follows:*

.....
.....

Name.....

Date..... Address.....

[illegible]

GENERAL DEPARTMENTS

BOSTON YOUNG MEN'S CHRISTIAN ASSOCIATION
312-320 HUNTINGTON AVENUE

Department of Recreation and Health

This department offers the best recreation that re-creates. Privileges as follows: Three Gymnasiums, Swimming Tank of Filtered Salt Water, Baths of all kinds, Classes accompanied by Music, Six Bowling Alleys, Tennis — Handball, Squash, Indoor Golf, Athletics — Indoor and Out, Basketball and other Games, Boxing, Wrestling and Fencing, Recreative Games, Annual Circus. Best of instruction. Medical direction. Come in at any time. Summer Camp at Lake Winnepesaukee.

Department of Religious Work

In order that young men may secure a well-balanced development and attain the true foundation for successful living, the Association advises each member so to plan his schedule that he may enter into one or more of the following activities: Character Building Classes Training for Christian Service Young Men's Sunday Forum Lectures and "Talks" Gospel Team Workers' Library Personal Interviews Twenty-four-Hour-a-Day Club

Department of Social Work

The attention of members is called to the many opportunities in the Association for social service, and also to the following: Correspondence Room New Year Reception Lodging Rooms Concerts and Entertainments The Association Restaurant New Members' Suppers Popular Social Evenings Camera Club

Department of Counsel and Placement

Advice given to young men concerning their vocational future, and efforts made to place them in positions best adapted to their varied abilities. The department also acts as a clearing-house for young men seeking work, and for employers desiring to engage reliable help. Its service is free and is not limited to members.

Boys' Department

The membership of the Boys' Department is made up of boys from Greater Boston, whose needs are ministered to by a force of young men who have made a careful study of "boyology." The division comprises boys from twelve to eighteen years of age, whose needs are studied and whose problems the Department tries to solve. Activities are conducted along social, physical, educational, and spiritual lines. The gymnasium and natatorium privileges are open to the boys at special rates. Annual Association Membership \$2.00.



